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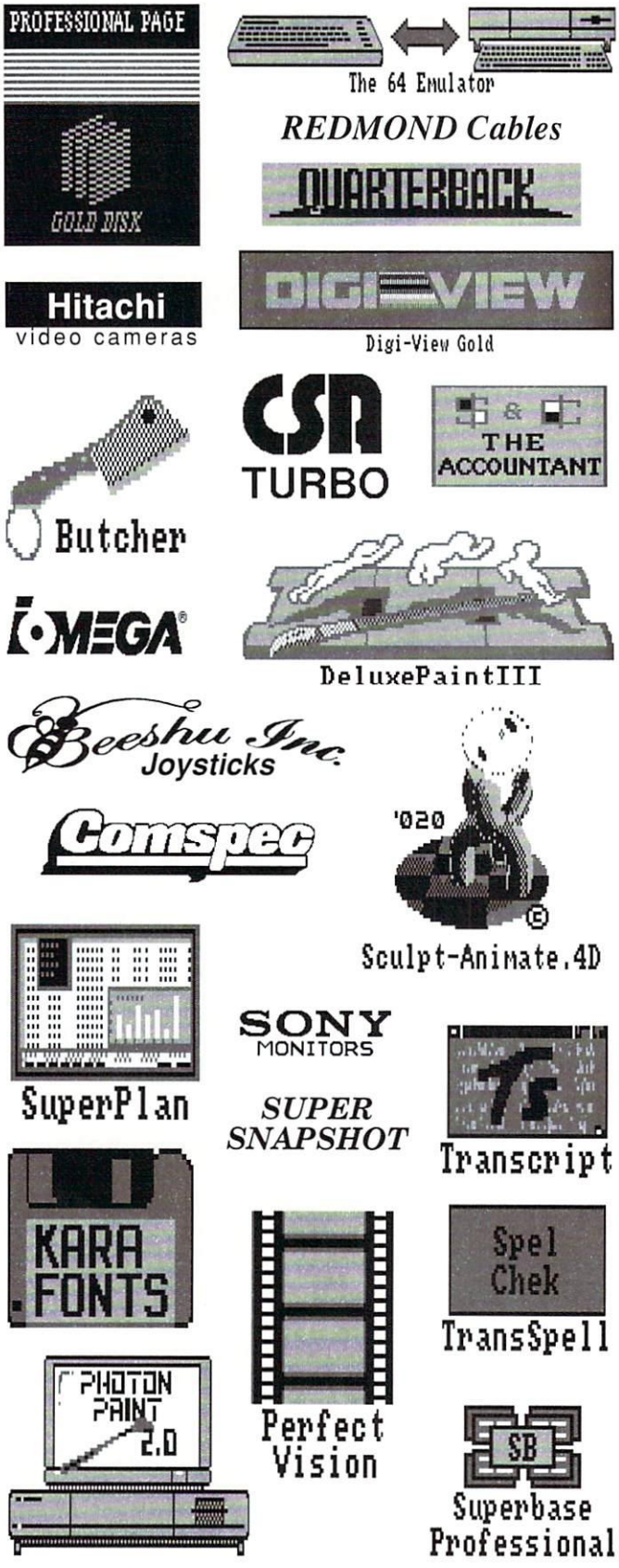

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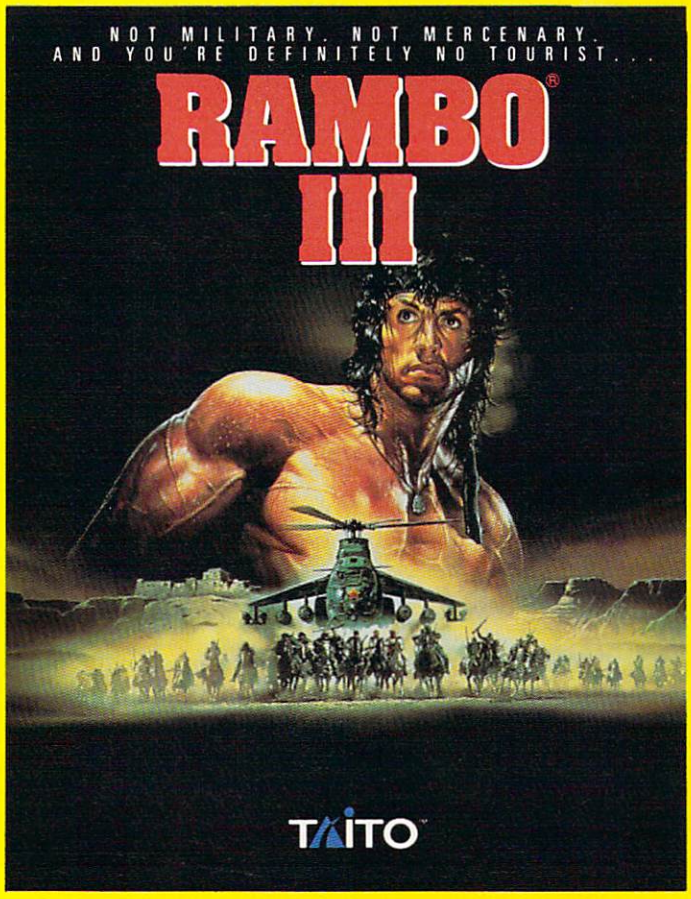

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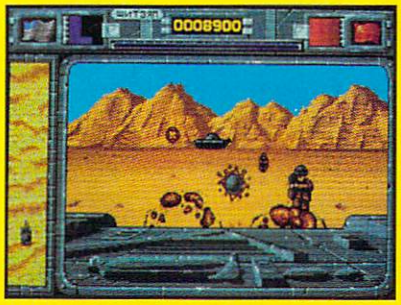

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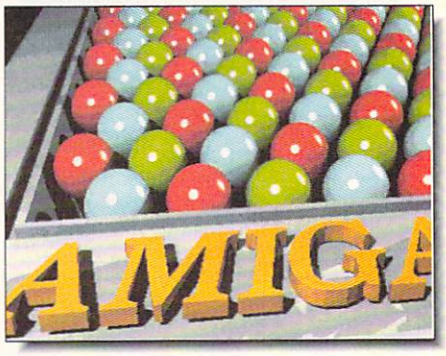
About INFO

INFO is a living showcase of what can be produced with affordable personal computer equipment (the Commodore Amiga, in particular) and readily available consumer software, peripherals, and services. With the exception of some ads, everything in this issue, including color screen shots and photos, was digitally created, edited, composed, printed, and color separated as complete assembled pages on Amigas, and output as film from a Postscript imaging device at 1270 dots per inch.



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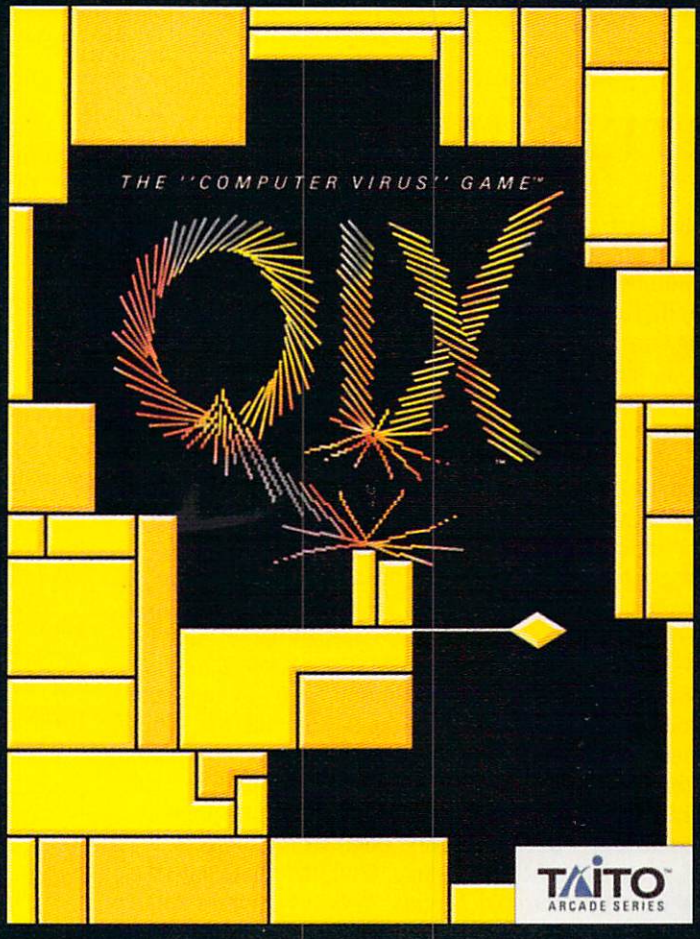

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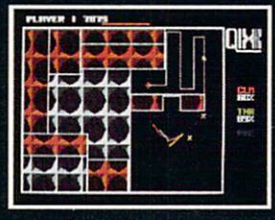

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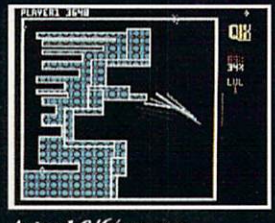
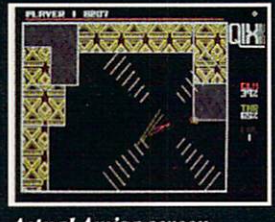


Actual C/64 screen.



Actual Amiga screen.

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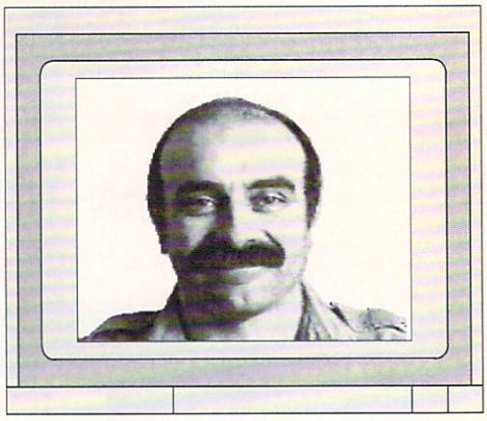

GHOST WRITERS IN THE SKY

It's like Benn said in this space last issue: the Amiga market is just not big enough to support the number of magazines devoted to it. He predicted that some of the Amiga magazines would begin to fail soon, and it has begun to happen. Unfortunately, the first two casualties are magazines we would have voted to keep around.

The first to go was somewhat of a surprise. *Commodore Magazine* was Commodore's "house organ" for more than ten years. It was originally established to fill the void before any independent magazines (except *The Transactor*, of course) existed to write about Commodore computers. However, according to our sources at Commodore it has lost money for some time now, and those losses made it one of the first things to be cut under new Commodore President Harry Copperman's reorganization program.

Commodore Magazine was always an exceptionally good publication. Though they could not write much that was uncomplimentary about Commodore, Jim Gracely and staff always produced a magazine that was entertaining and informative. *Commodore*'s writers included some of the top names in the business, and we only hope that Bob Baker, Shay Addams, Lou Sander, Gary Fields, and all the rest will find new homes. (We know that Shay Addams will -- his *Adventure Road* column will be coming to the pages of *INFO* starting with our next issue!) *Commodore* mag staffers Sue West, Mike Rivers, Jim Gracely, et.al., are being transferred to new jobs within the halls of Commodore, and we wish them luck in their new endeavors.

Robo City News is the first independent Amiga magazine to suffer defeat in this highly competitive marketplace. Kayvan Pejooh, Mitch Lopes, and a cast of *Robo City* regulars -- John Foust, Matthew Leeds, Peggy Herrington, Mike Smithwick, Tim Avery, and many more too numerous to mention -- made *Robo City News* a fount of fresh, feisty, and fun inside information.

Established by a hard-core group of Amiga users from the First Amiga Users Group, *Robo City* never strayed far from its roots. Even after achieving national distribution and joining the mainstream struggle for ad and subscription dollars, *Robo City News* kept its edge. It never dodged an issue or schmoozed an advertiser. Unfortunately, in this highly competitive market it's often the huge Goliaths that slay the intrepid Davids. *Robo City* was a small but honest voice in the chorus of mostly "me-too" Amiga magazines, and its voice will be sorely missed. The losers are not so much those who published the *Robo City News* and put their hearts and souls into it, but the readers who now have one less good choice at the newsstands.

The little bit of good news to come out of all this is that *Robo City* subscribers will not lose their subscription investments. *INFO* has acquired *Robo City News*, and all *Robo City* subscribers will begin receiving *INFO* in its place beginning with the Nov/Dec issue. (Those who subscribed to both *INFO* and *Robo City* will have their subscriptions extended.) *INFO* will also become, as much as possible, a forum for the Official Voice of *Robo City*, starting with a transitional editorial from Editor Mitch Lopes in our next issue. We hope that the spirit of *Robo City* can, in some small way, survive within the pages of *INFO*.

We hope that the loss of these two quality publications can at least serve to spur some of you to action. Please don't forget to support the Amiga magazines you like by buying them on the newsstands, sending them subscription checks, or (if you're a product manufacturer) by advertising in their pages.

Now we're off to AmiEXPO in Chicago in a couple of days, where we'll hobnob with our fellow wizards in the Amiga industry. Hope to see you there!

- Mark & Benn

SIX YEARS AND COUNTING

This issue marks the sixth anniversary of INFO Magazine. We'd like to thank all our loyal readers and advertisers who have made INFO's longevity possible. We've stirred up some hornets' nests in our time, but we've always tried to tell it like we see it. With your continued support, we promise we'll keep it up for a long, long time to come. Thanks!

- Mark & Benn

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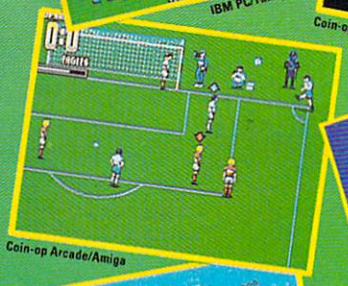

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Please don't call the INFO offices with general questions about computing or send self-addressed stamped envelopes expecting a personal reply. We just don't have the staff to handle it. Thanks.

Mail From: ComcenKilr (L.F. Schroder)

Issue #26 is the first issue of *INFO* that I have read. Until today, I thought all computer magazines were dull, with dumb articles and those long type-in programs that I can't stand. But *INFO* is great, covering many different topics and containing interesting interviews, articles, reader mail, etc. Great job!

You noticed we always print an obligatory "INFO Is Great!" letter, didn't you? And this was a blatant attempt to get a letter published, wasn't it?

- Mark & Benn

U.S. Mail From:
Joseph J. Firestone, President,
The Electronics Boutique, Inc.

Recently *INFO* magazine in their July/August issue published an article regarding our decision to no longer carry Amiga hardware in our stores. The information in the article was based on the opinion of one individual who was not speaking on behalf of the company. For quite some time now, our company has not stocked computers for sale in our stores but rather has chosen to handle them on a special order basis only. This applies to the IBM compatibles and Commodore 64 as well as the Amiga 500. Our decision not to stock hardware has been a financial and business decision since we have preferred to invest our money in a greater software selection which is, we believe, more of a priority to anyone who already owns a machine. The trend in the industry for quite some time now has been for computer dealers to sell the hardware and software dealers to sell software, accessories and supplies.

We have always supported the Amiga as well as all Commodore products. We currently stock approximately 50 Amiga titles and continue to bring in new titles as they become available. Sales on Amiga software titles, however, tend to drop off relatively fast; usually in three to four months. Therefore, we tend to pull slower selling titles after a while in favor of new releases.

It should also be noted that we are still one of the stronger supporters of Commodore 64 and 128 software and continue to have one of the best selections of any retailer. We also carry Macintosh software and Apple II software even though neither of these machines have ever been sold by the company.

We hope your readers and Amiga owners will continue to visit our stores to see the latest in software and supplies for their machines.

The Electronics Boutique store manager who first told us that your chain was dropping Amiga hardware phoned store managers in at least five states other than his own, and they all concurred with his opinion that removing Amigas from their stores would be a mistake. We might also point out that we contacted your headquarters repeatedly for an official statement but neither you nor anyone at your organization returned our calls at the time.

The store manager in question seemed to be mainly concerned that he would no longer have an Amiga 500 demonstration unit, which he credited with bringing a great many people into his store, even those intent on buying IBM software. For our part, we appreciate the fact that your stores will continue to be a source of C64, C128, and Amiga software, but we lament Commodore's loss of 140 retail outlets for Amiga hardware. We are also concerned that the Electronics Boutique memo announcing the change said, in part, "We want to place more emphasis on the mainstream of the computer market... IBM and Macintosh." That didn't sound like particularly good news for Commodore fans.

Your decision seems especially ironic considering that Electronics Boutique is located just down the street from Commodore's HQ. Commodore can't even seem to keep the hometown store in their court. We worry about what that might foreshadow. **- Mark & Benn**

➡

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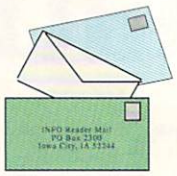

QLink Mail From: RaymondD2

In your Jul/Aug *INFO* there was a letter from Steve Emsley, who said there is no public domain player that plays Enhanced SID music, but there is! You guys mentioned it in *INFO* #25; the #26 Public Domain Section also said *Str-player10.SDA* plays enhanced SIDs. And Compute! Books has a Public Domain player called *ENH SID PROMO.64* that's been out for a long time. It's hard to believe you guys made two mistakes like this!

We don't make mistakes. All of the supposed "mistakes" in INFO are part of a devilishly clever scheme whose exact details we can't reveal, but which will become completely obvious to everyone sometime shortly after the turn of the century. All we can say is that it involves sensitive National Security matters and secret coded messages, and we're not afraid to look like a bunch of ignorant dweebs in print if it helps to preserve Democracy. **- Mark & Benn**

QLink Mail From: DVS

Is it ok to pass along *INFO*'S ratings and game tips to BBS's as long as *INFO* is credited? Thanks for a great mag. I wish you were monthly!

The INFO policy on republication is that it is okay to reprint quotes of up to a paragraph or two in non-profit user group publications (this includes BBS's). All we ask is that you don't reproduce entire articles or whole sections of the magazine. Let's give people some reason to buy INFO! Thanks for asking! **- Mark & Benn**

QLink Mail From: RidgeRunr

In your Public Domain column in issue #26, under the header box, it states 'You don't have to belong to these online services to obtain these programs.' and then reviews *OMEGA-Q*, which is under direct licensing by Quantumlink strictly to Quantumlink users.

True, despite our "blanket availability statement," an occasional program listed in our Public Domain column is for licensed use only by subscribers to those services. We will try in the future, to clearly indicate which programs those are. **- Mark & Benn**

QLink Mail From: Jerry90

What is *The 64 Emulator* you have listed on your masthead page?

The 64 Emulator is a software product from ReadySoft that allows an Amiga to run C64 software... sort of. It does a fair job running utilities and wordprocessors and other undemanding software. But for games, it is really slow. So slow, in fact, that you can often see just exactly what's going on and study up on your strategy. (It's kind of like watching your golf swing in slow motion on videotape.) There is, however, a cable included that will let you hook up a 1541/1571 disk drive to the Amiga, and a stand-alone file transfer program that transfers data files back and forth between the C64 and Amiga. It even has built-in PETSCII to ASCII text conversion. That's what we use the 64 Emulator for at INFO -- transferring text and graphics files from the C64 to the Amiga. **- Mark & Benn**

QLink Mail From: Mike599

Why did you stop putting Erg Cards in INFO, and are you going to bring them back at all? I for one would like to see them again as I use the ones I have quite a bit and find them extremely useful.

Boy, do you ask the right questions! With our INFO MousePad offer, we're planning on including additional mousepad reference cards in future issues of INFO. However, unlike Erg Cards, which were bound into every copy, these cards will be included in the poly bag for subscribers only! If you have any specific reference cards you'd like to see, please let us know!

- Mark & Benn

QLink Mail From: Gennadius

I enjoyed your Real World article in the May/June *INFO*. My dad and I have ordered books from Lindsay Publications several times, and have never had any trouble with service. You are right about some of the experiments in their books being dangerous, though. One book has an article in it about filling a lightbulb with water and plugging it in to see 'stars.' The book is subtitled "1001 things for boys to do"... like trying to kill us! By the way, I think your magazine is tops!

Not to alarm you, guy, but if I were you, I might poke around and find out if my old man had taken out a big life insurance policy on me. Just to make sure, you understand.

- Mark & Benn

➡

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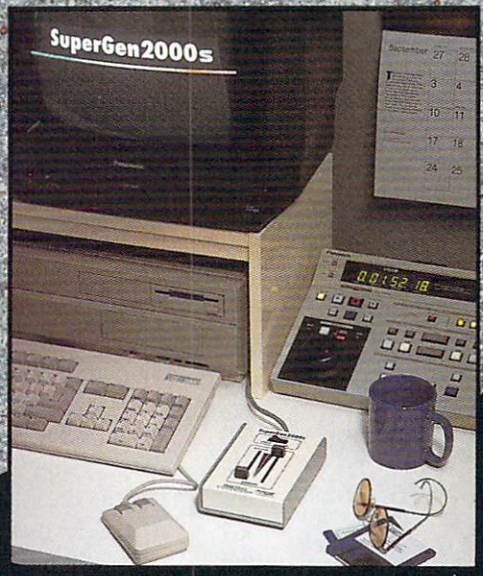

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READER MAIL

QLink Mail From: REASON

You guys are too cool to be working in Iowa! I once visited a friend in Storm Lake and I thought I'd go nuts staying where all the radio stations blare out "And the Hawkeyes have the ball!"

As Iowa City is the hometown of those selfsame "Hawkeyes" that you mention with such derision, I'm afraid I will have to differ with you strongly. To enlighten you as to the alternative point of view, Benn and I have had to (briefly) stay in backwards parts of the country where the radios do not routinely announce that "The Hawkeyes have the ball!" and I must say that I do not look forward to such trips.

- Mark & Benn

QLink Mail From: RobertB27 (Robert Brown)

Just who the heck does Loren Lovhaug think he is? *[See interview in issue #26. -Ed.]* I don't know about you folks, but if I were working at Commodore and read what he had to say in that last issue, I believe I'd have to think long and hard about passing the reins of customer support over to him. The problem started with Commodore, let it be corrected by Commodore. They're in business to make money, just like the rest of the world. If they want to stay afloat in the computing world, they will have to instigate a reasonable customer service policy. Do they seriously think that developers would consider working on projects for their machines if it were thought that there would not be support for the machines themselves? I say "commitment" is the real answer to the Commodore problem. Thanks for the chance to express my views.

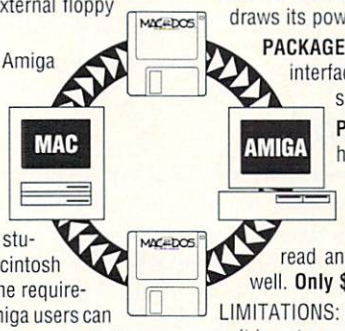
On the other hand, there's a big argument to be made that Commodore has had seven years to establish a reasonable customer support program for the C64, and in the opinion of many users has still failed to do so. Commodore's new president, Harry Copperman, says he's dedicated to solving Commodore's customer support problem. Let's wait and see which direction he goes in.

- Mark & Benn

MAC 2 DOS™

Mac-2-Dos lets you read and write Macintosh diskettes on your Amiga!

Mac-2-Dos gives your Amiga the power to read and write files to and from 400k and 800k Macintosh floppy disks using a standard Macintosh-compatible 3.5-inch external floppy disk drive connected to your Amiga.



Here are a few typical Mac-2-Dos uses: ✔ Amiga users can now have access to the extensive variety of Macintosh clip art available on Macintosh disks! ✔ Amiga users can now take their Amiga PostScript files (on a Macintosh diskette) to most any typesetting service bureau to be output on professional typesetting equipment! ✔ College students who are required to have a pricey Macintosh can now choose the Amiga and still meet the requirement of being Macintosh compatible! ✔ Amiga users can transfer all kinds of files, like word processing and desktop publishing files, spreadsheet files, or database files. ✔ Musicians can quickly and easily transfer Standard Midi Files (SMF) between the Macintosh and Amiga!

Mac-2-Dos includes a custom hardware interface, driver software, file conversion software, and, optionally, a Mac-compatible 3.5-inch floppy drive. The hardware interface plugs into the Amiga external disk drive connector or into the last external drive of the daisy-chained disk drives. The Mac drive draws its power from the Amiga.

PACKAGE A: Package A includes a custom hardware interface, file transfer software, and file conversion software. **Only $99.95***

PACKAGE B: Package B includes a custom hardware interface, file transfer software, file conversion software, a Mac-compatible 3.5-inch floppy drive, and a software driver to allow the Mac drive to be used to read and write standard AmigaDOS diskettes as well. **Only $349.95†**

LIMITATIONS: Mac-2-Dos is a disk file transfer utility program; it is not a communications program, nor is it a Macintosh emulator. It DOES NOT permit Mac programs to run on the Amiga.

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*- Steve Dock, **The Amiga Sentry**, March, 1989*

"...Quarterback is the program I've chosen to keep my hard disk backed up.... Given the added power and lower price of Quarterback, it would be my first choice for a hard disk backup program."

*- Matthew Leeds, **Commodore Magazine**, June, 1989*

"The fastest of the lot, Quarterback V2.0 copied my 4.3 megs to five floppies in four minutes and fifty seconds. The user interface is smooth and intuitive, the process painless and reliable, and the speed a good sight better than even second runner up.... There are just enough gadgets around to make things easy, and not so many as to make them confusing. This is the program we use to back up our hard disk and Bernoulli data."

*- Mark R. Brown, **INFO #26**, May/June, 1989*

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News & Views

COMPUTER COALITION

IBM, Compaq, Cray, Hewlett-Packard, NCR, Sun, Tandem, Unisys, and Apple Computer have joined forces to help ensure the long-term competitiveness of U.S. computer companies. The coalition, called the Computer Systems Policy Project, will lobby government policy-makers and will look into what cooperative efforts could aid the U.S. computer industry.

BIBLE ON DISK

The King James Bible is now available in an Amiga version. It comes on seven disks and includes a 290K subject reference file. A shareware reader is included which features a search function so that references can be located in a matter of seconds. When installed on a hard drive, the entire Bible (New and Old Testaments) will occupy about five megs of space. $25 (foreign $35) from: Fred Herrmann, 10006 Covington Dr., Huntsville, AL 35803.

NEW FACES AT CBM

Commodore's new president, Harry Copperman, seems to be a man of his word. One of his first stated goals was to bring in some key people to fill crucial Commodore management positions, and to create new positions of responsibility over areas critical to Commodore's survival and growth. A flurry of new upper-management hirings indicates he's intent on keeping his promise.

Brian C. Weyman has been hired as vice president of worldwide manufacturing and purchasing, a new position. Weyman, 46, was previously vice president of worldwide electronics strategy and implementation for the Xerox Corporation. He joins Commodore after 28 years of service at Xerox in various manufacturing management positions in the U.S. and Europe. Most recently he was vice president in charge of Xerox's Southwest U.S. manufacturing and distribution operation.

Jaime Figueroa has been named as director of sales for Latin America, another new position. Figueroa, 36, previously was dealer operations manager for IBM Latin America.

Commodore also has a new Vice President of Marketing. C. Lloyd Mahaffey is a former director of educational marketing for Apple, and most recently served as the director of their Federal Systems Group, charged with marketing computers to the government.

The resumes of these new Commodore executives read like a "Who's Who" of computing, and their combined years of experience should make a real difference in Commodore's future.

INFOmania Game Tips

Here are some secret "side doors" and "back doors" to your favorite C64 and Amiga games, discovered by INFO readers!

C64

Ghostbusters: When you're prompted for your name, type in OWEN, then when it asks whether you have an account, answer yes. When you are asked for your account number, type the word LIST and you'll start the game with 720,000 instead of 10,000. - Jerry Wallace

Power Struggle: Hitting F5 will end a turn more quickly. - Justin Bell

Airborne Ranger: There is a quick way of resurrecting your man if he is killed in action. When the award screen appears and prompts you to insert your Roster Disk, just push the button and leave the game disk in the drive. It will then ask you to retry or cancel. Hit cancel and your ranger will be saved, returning you to the assignment screen. - Stanley Hess

AMIGA

The Duel - Test Drive II: While driving, pushing the 'f' key will degrade the graphics and turn off the cliff-jumping scene (replacing it with the usual crash). The clock still counts down at the same speed, but the display updates more quickly, so you can achieve a better speed. - Gary Bunker

Major Motion: Using both the mouse and joystick at the same time will give you more power for ramming other vehicles. - Chris Gott

Leisure Suit Larry: To go directly to any location, push ALT/D and then type (TP). The computer will ask which room you would like to go to. Enter a three-digit number from 008 to 045. Sample rooms: 017 - Hooker's Room; 043 - outside the hot tub; 024 - disco. - Aaron Foster

---

If you've discovered hidden "secret tricks" in your favorite game, share them with other INFO readers! We're not interested in strategy tips, but true "side doors" or "back doors" that work to your advantage, or let you do something weird and wonderful. If we print your tip, we'll include your name and send you a world-famous INFOManiac Kit! Don't forget to tell us which machine the tip is for! Send to: INFO Mania, PO Box 2300, Iowa City IA 52244.

LIBRARY OF CONGRESS

Commodore is sponsoring a touring exhibit called "To Make All Laws," which is a celebration of the 200th anniversary of the Library of Congress. The exhibit will feature historic documents and an interactive videodisc display based on an Amiga 2000. The tour, which starts in November, will visit 30 big city libraries over the next two years.

CSERVE BUYS SOURCE

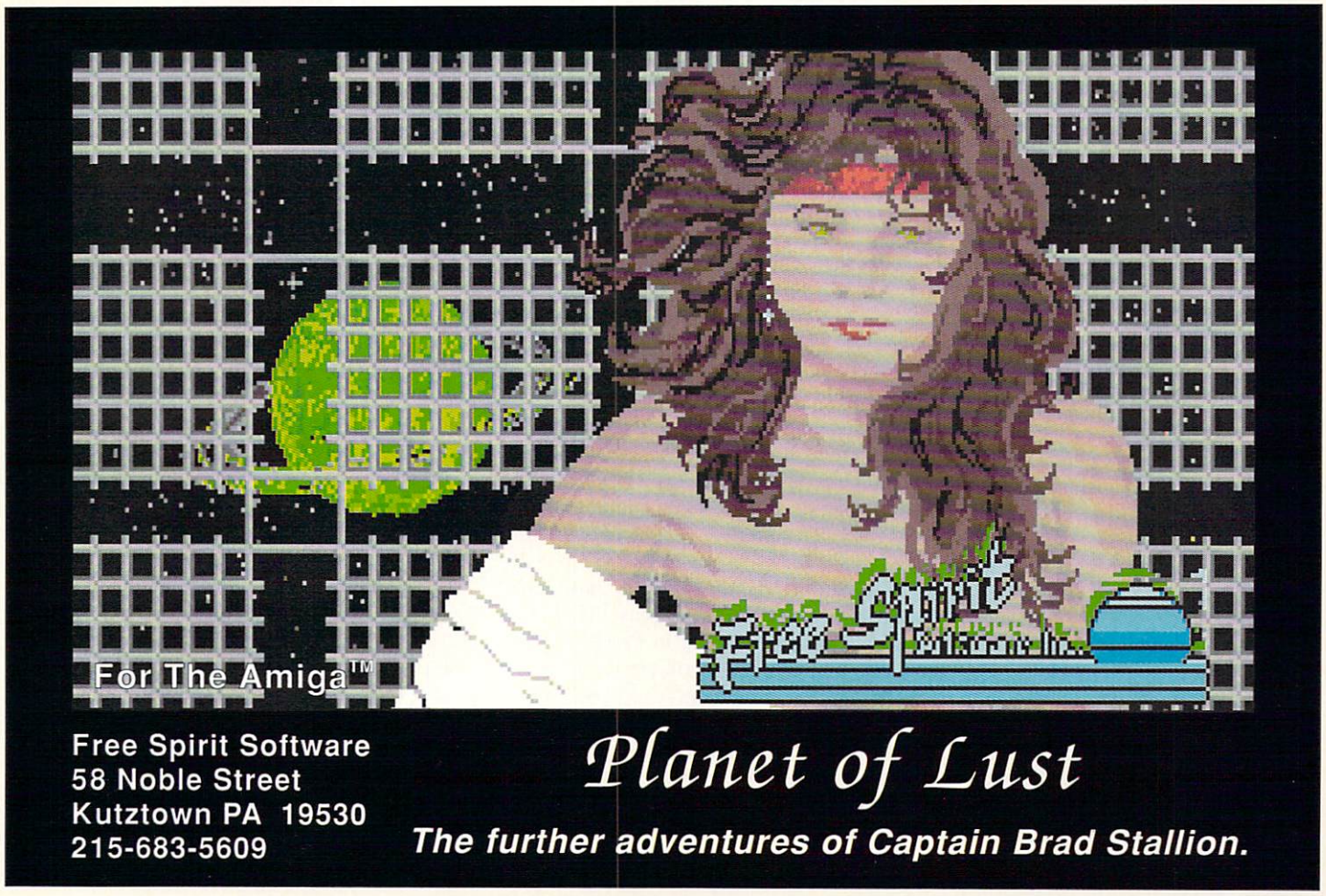
CompuServe has purchased the ailing Source Telecomputing Corp. The Source ceased operations on August first and its 53,000 subscribers are being offered a $20 usage credit to become CompuServe members. CompuServe has installed additional customer service telephone lines to answer questions from Source members, and a customized "welcome" menu will appear to help Source subscribers get accustomed to CompuServe. The Source, which began 10 years ago, has had several owners. Most recently it was sold by Reader's Digest to a New York venture capital firm. In its heyday, The Source reportedly had some 80,000 subscribers and several hundred employees.

FREE TAPE

If you'd like to see what the Macintosh is capable of in the desktop video department, here's your chance to find out and, at the same time, glom onto a free 15-minute VHS videotape at Apple's expense. Apple is offering a free copy of "The World of Apple Desktop Media" to anyone who asks through Sept. 30. Call 800-446-3000, or write Apple Desktop Media Tape, Apple Computer, PO Box 751630, Memphis, TN 38175-9967.

DIGITAL DIGEST

There are a lot of people combining digital computer and amateur radio technology for applications like packet radio and slow-scan TV. Their newsletter is *Digital Digest*, a bi-monthly publication that provides all the latest poop on these topics. In the single sample issue we've seen, there were specific articles concerning C64 and Amiga products, as well as many more general articles concerning packet radio networks, test equipment, and other digital radio topics. There are even ads for radio-related C64 and Amiga hardware and software. Subscriptions are $16 ($22 foreign) from: 4063 N. Goldenrod Rd., Winter Park, FL 32792.



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4TH QUARTER $$$

Commodore has announced that, due to the appreciation of the dollar, sales for the fourth quarter ending June 30, 1989, are expected to be below the sales of $215 million reported in the June quarter last year. Earnings are expected to range from a modest profit to a modest loss. Commodore noted that with 75 percent of sales generated overseas, the strengthening of the dollar against other major currencies, especially the Deutsche Mark, cost them sales in Europe. The squeeze works both ways, since the change in exchange rates will have only a small favorable effect on product costs due to the delayed impact and more limited strengthening of the dollar versus the currencies of Far Eastern countries where components are sourced. On a "local currency" basis, however, sales are expected to show an increase in most countries. Results for fiscal year 1989 will be announced in August.

1989 income will substantially exceed the $48.2 million, or $1.51 per share, reported in fiscal 1988. Although strength in the U.S. dollar could continue to affect near-term results, CBM says that "pricing actions and product cost savings should impact profit margins favorably." Further, they say that "Commodore's growing penetration of the professional sector will contribute to increased growth in the latter half of fiscal 1990."

Commodore stock dipped five points from 18 1/8 to 13 1/8 a share in the wake of the announcement at the end of June, and buy/sell activity increased fourfold over normal trading volumes.

Rumor Mill

DISCLAIMER: The following are among the most entertaining rumors we've heard the past couple of months. They are presented for your entertainment and amusement only. Please do not make any important decisions based on these rumors, as many will prove to be inaccurate or just plain false.

➢ We understand that a major Commodore dealer is putting together a class action suit against Commodore, charging CBM with unfair business practices. What's the beef? This dealer says Commodore has been selling Amigas to a mail-order firm at a price that allowed them to be sold to the public for less than dealer wholesale cost.

➢ Two of *Discovery Software*'s top programmers have left to found a new software company. It's called *Innerprise*.

➢ We hear Commodore may have gotten upwards of 8,500 letters advocating that they adopt Loren Lovhaug's proposed C64/C128 support program (read details in his interview in INFO #26).

➢ It always seems to happen anytime you upgrade anything. The new Super Agnus chip apparently has some subtle differences that will keep some games from running properly.

➢ QLink has demoed a new program that will allow QLinkers to play SID files while online and chatting in People Connection. It should be available for downloading by the time you read this. Now when will they add a mail editor with real editing functions? And how about an Amiga version of the terminal software?

➢ Phoenix Electronics has new clout, having been taken under the wing of Applied Technologies' Micro R&D division.

➢ Exciting new product: an inexpensive, compact video digitizer that will capture up to ninety seconds of compressed color video and stereo audio to a floppy disk in REAL TIME!! Coming soon to an Amiga near you.

➢ Hewlett Packard may be getting closer to that rumored Commodore buyout we told you about last issue. It seems some H-P execs visited West Chester on a "fact-finding tour" recently.

➢ Good luck and best wishes to Guy Wright, who we understand is about to show up on the masthead of *Amiga Plus* magazine as Contributing Editor.

➢ We understand the folks who make the Trumpcard may be the first out with a hard disk patch for ReadySoft's A-Max Macintosh emulator. The first of the "official" patches will probably be for CBM's A2090 and GVP's SCSI controller.

➢ CBM Europe is officially blaming the strong dollar for lower-than-expected 4th quarter '89 sales in Germany, but we note that there's also a new President of Commodore/West Germany.

➢ One Commodore insider blames the reportedly high failure rate of early Amiga 500s to a too-high speed bump in the Commodore parking lot. It seems the trucks took it at a high enough rate of speed to shake chips and wires loose. He reports the problems disappeared when the speed bump was leveled out.

COMMODORE IN THE MEDIA

People ask us why INFO reports sightings of Commodore computers on film, on television, and in print. Well, we like to think that the exposure Commodore products get in the media can have a positive effect in the marketplace. If that explanation doesn't work for you, just think of it as "Commodore Trivia."

Watch and you might catch *"Leviathan"* and *"I'm a Satellite"* on MTV. Each had portions created using an Amiga and A-Squared's Live! digitizer.

On an episode of the Fox show *The Reporters* called "Little Big Man" a Commodore 64C was shown in the subject's room.

Jim Sachs' C64 demo "Time Crystal" appeared on ABC's special *Electronic Time Machine: 1939 to 2039*, as did several Amigas.

The movie *Food of the Gods, Part 2* has an Amiga computer and monitor in the lab where animals grow big from ingesting a special liquid. Our spotter notes, "They picked an appropriate computer because the Amiga is growing bigger and bigger, too!"

The PBS show *Motor Week* shows an Amiga 1000 and 2002 monitor almost every week, sitting behind reporter Lisa Barrows.

The Indiana Jones exhibit at Disney's MGM Studios is, at least in part, controlled by two Amiga 2000s.

If you saw the underwater monster flick *DeepStar Six* you probably noticed the Amiga 1084 monitors in just about every computer scene.

On the NBC-TV movie *Bionic Showdown* the lab/operating room set featured an Amiga 1000, an Amiga 2000, and a 1084 monitor displaying patient information and bionic scans, with great animation of arrows, leg pins, and 'nuclear capillaries.'

In the Tom Hanks movie *Big* there is a scene in Tom's office that shows a Commodore 1702 monitor. Unfortunately, it's connected to an Atari 800 computer!

If you saw the campy SF epic film *Earth Girls Are Easy*, you probably noticed the prominently-displayed Amiga 2000.

The PBS children's show *Zoobilee Zoo* has an Amiga 1000 (covered with multicolored polka dots, no less!) in Talkatoo Cockatoo's house.

Thanks to Commodore spotters Sue Albert, The Tinman, Jack Ulrich, Wayne Lorentz, Stephen Guilliat, Mark Hadland, Christopher Morley, Kim Boothroyd, Tony Garcia, Louis W. Vidal, Ted Craig Jr., Bill Brenn, Jim Biggs, Ben Bingham, Robert Eber, Jeff Persyn, Rob Dangel, Doris Latimore, David Ferguson, David Twigg-Flesner, Minh Pham, George Knochel, and David Agee.

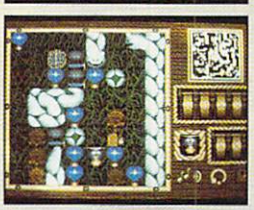
If you've spotted a Commodore product in the media, report it to INFO Sightings, PO Box 2300, Iowa City IA 52245, or on QLink and PLink send EMail to INFO Mag. If it's the first we've heard of it, we'll print it here and give you credit. Such a deal!

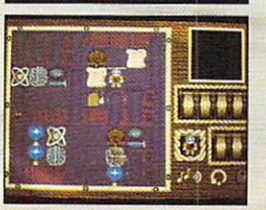
PROSPECTOR
IN THE MAZES OF XOR™

Meet Herb and Pip, our crazy heroes, as they prospect for big, blue balloons in the fiendish caves of Xor. Once our heroes have found all the balloons they must make good their escape from the caves. Enjoy the hilarious escapades of Herb and Pip as they dynamite their way through vast cave walls, send rocks falling from dizzy heights and roll giant spheres through long, dark passages. Each game comes complete with a fantastic free balloon.

Prospector in the mazes of Xor is available in totally slap-bang-up-to-date 1989 style for your Commodore Amiga NOW! Game designed by Astral Software and developed by Hidden Treasures - the team that brought you StarRay

AMIGA ONLY $39.95





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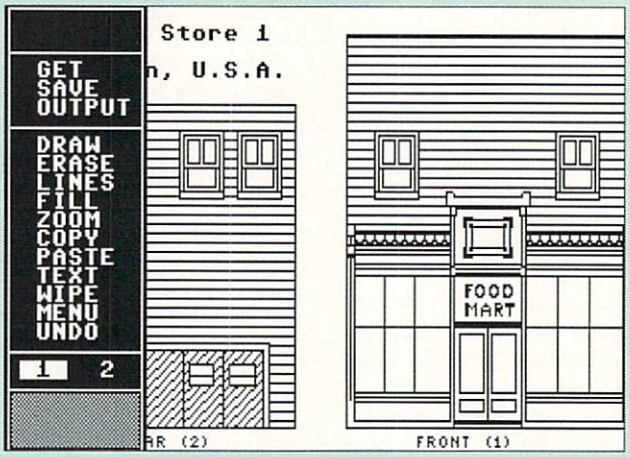
8-BIT SOFTWARE

BUNDLING

Broderbund has put three of their best C64 titles in one package and is offering it at a special price. Called **The Family Software Library**, you get *Bank Street Writer* (wordprocessor), *Type!* (typing tutor), and *Where in Europe is Carmen Sandiego?* (one of the best educational games) all in one package for $69.95. 17 Paul Dr., San Rafael, CA 94903. 415-492-3200.

NEW AND ONLINE

If you've ever heard or read about France's Teletel phone network, you'll be glad to know that the same type of service is now being offered by *Minitel Services*. Basically, Minitel connects companies and users on a global basis via a simple to use standard graphic interface. For example, a user in Omaha can hit a couple of keys (the interface is menu-driven, and uses only 8 keys) and be talking to a croissant vendor in Paris or a game SIG in New York. In many cases, you won't just be talking to another computer, but to an actual, living and breathing human. We understand that in France, this service is more popular than TV, and we have to admit it sounds intriguing. For users, the software is free, and there is no sign-up fee or monthly minimum, with charges being levied by the particular company you connect to. Companies wanting to become part of the network should contact Minitel. 2900 Westchester Ave., Suite 101, Purchase, NY 10577. 914-694-6266.



★★★★★

HOMETOWN, U.S.A. $39.95

Publishing International, 333 W. El Camino Real, Suite 222, Sunnyvale, CA 94087, 408-738-4311

Ho, Hum! Here's another paper toy program. Sure, it's simple to use, with most commands needing only one keystroke. And right, it's got a decent manual with all the graphics screens illustrated. Yeah, it lets you format a disk, isn't copy protected, works with the major printers and interfaces, and supports two drives. But what about its lack of support for the 1351 mouse? Huh? HUH?

See, I'm tough, but... ah... hmmm-m-mm. Take a look at these sixteen quaint buildings with dozens of windows, doors and architectural details. Gee! The buildings are in H.O. model train scale. And those texture fills... and the graphics editor not only lets you create or redesign buildings, but you can paste objects over in transparent or masked mode. Son of a gun! This may be one of the cleverest creativity programs to come down the pike in many a moon.

There's a dandy book provided that suggests using assembled buildings as gift boxes or tree ornaments, and it's filled with ideas for classroom projects, plus assembly hints. The C64/128 program is in B&W, but think color paper, color ribbons, and hand coloring. The Amiga version works only from within *Deluxe Paint II/III* or *Photon Paint 2.0*. This opens enough possibilities for texture fills, digitized photo surfaces, sizing, and laser or color printouts to boggle the Ami-gination.

Need I mention the great holiday gift potential of *Hometown, U.S.A.*, or how grateful a teacher would be to have this donated to a school? - Sue Albert

AMIGA SOFTWARE

COMMLINES

A new set of C functions tailored for communications is now available from *Lattice*. The **Communications Library** includes support for XMODEM, YMODEM, KERMIT, and ASCII, along with other telecommunication functions such as autodial/answer, error-checking, and the like. The *Library* itself is $250, and the source code can be had for an additional $250. 2500 S. Highland Ave., Lombard, IL 60148. 312-916-1600.

CASHING IN

KFS Software has put together an Amiga inventory/cash register system that ties into the *The Accountant*, their popular business accounting package. For $699 you get an MMF Industries ECD-200 cash drawer and a Star DP6840 4.5" receipt printer. 1301 Seminole Blvd., Largo, FL 34649. 813-584-2355.

COLOR MATCHING

If you've ever tried to produce a particular shade on a color printer, you've doubtless discovered that what you see on the screen is usually completely different from what prints out. *Ontological Survey* has released a disk of IFF screens containing swatches of color, each labeled with the RGB values needed to produce it. By printing the screens, you can make yourself a chart and thus know how the various shades translate from printer to screen. **Palette Printer** is $29.95. PO Box 17488, Milwaukee, WI 53217.

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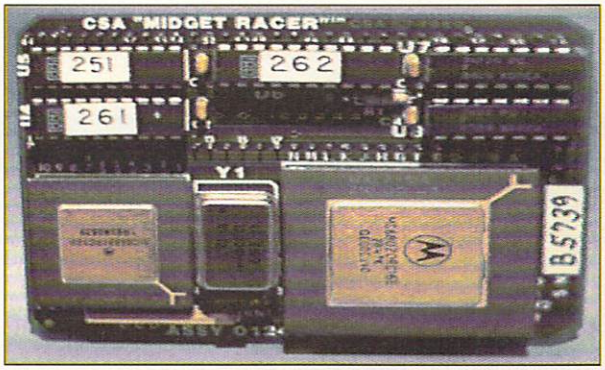
THE PRICE! ONLY $399 INCLUDING CPU



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68020/881-2 33MHZ ACCELERATOR
FITS ALL AMIGA COMPUTERS

The Midget Racer delivers the speed of a 68020 processor while remaining software compatible with processor intensive applications like Video, Animation, Ray-Tracing, Desktop Presentation, CAD, and Spreadsheets.

By replacing the 68000 CPU with a plug-in 68020 daughterboard and including a co-processor socket which directly accesses the 68881 or 68882 at speeds up to 33MHZ, the Midget Racer provides flexibility and power without the need for special operating software.

Now you don't have to spend a fortune to give your AMIGA the speed and flexibility of 32-BIT power! Easily installs in any A500, A1000, or A2000.

SO, DON'T LET AN EXCUSE STOP YOU FROM UPGRADING! CONTACT YOUR LOCAL AMIGA DEALER OR CSA FOR MORE DETAILS.

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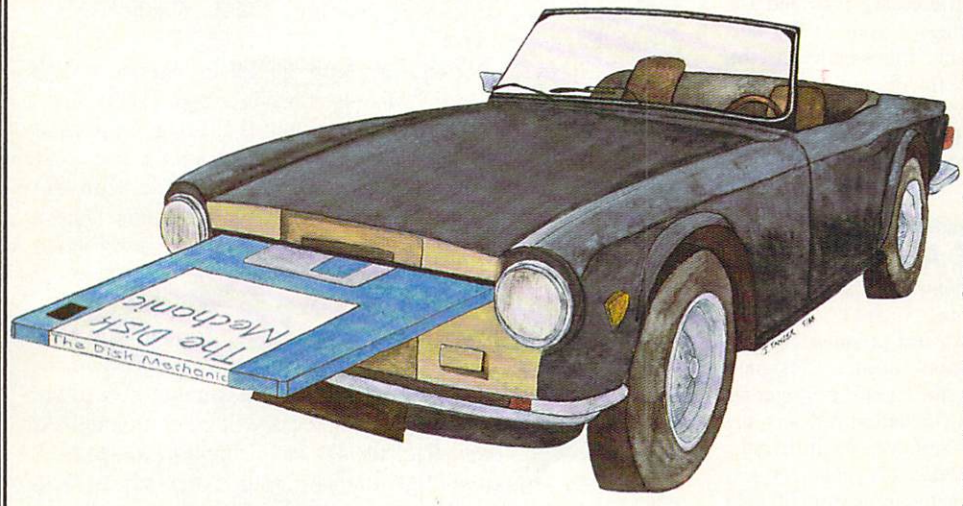

The Disk Mechanic

The Disk Mechanic requires a 512K Amiga and Kickstart version 1.2 or later. We are now shipping Version 2.5: registered owners should contact us for upgrade details.

Lake Forest Logic Inc.
28101 E Ballard Road
Lake Forest, IL 60045
(312) 816-6666

Give Your Disks a

Tune-up

The Disk Mechanic is a comprehensive collection of disk management tools for the Amiga. The package includes a disk optimizer, hard disk back-up program, file recovery program, disk editor, and a dozen CLI utilities.

With the TuneUp disk optimizer you can increase floppy and hard disk performance up to 500%.

Deleted files and corrupted disks can be recovered with the Disk Repair program.

DoubleBack makes the task of regular hard disk back-up fast, easy, and safe.

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New Products & Reviews

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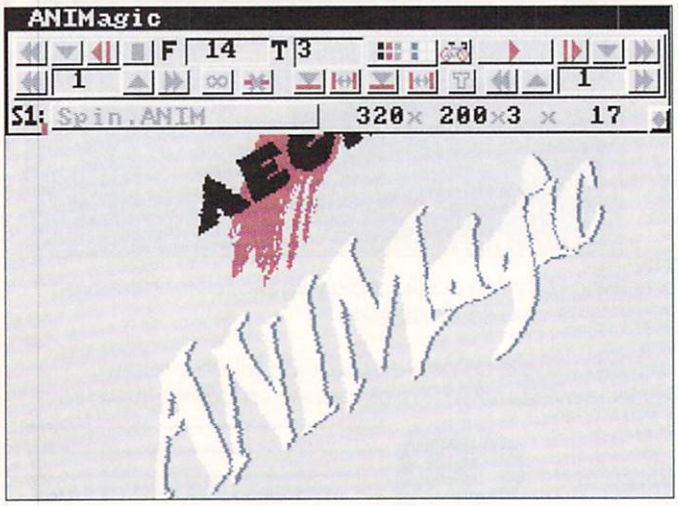


ANIMagic from Aegis.

MAKING IT MOVE

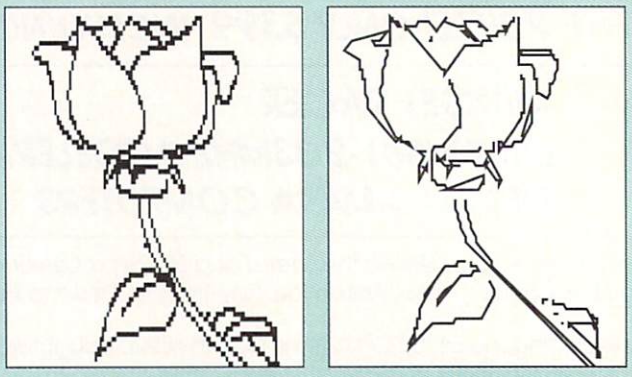
Aegis sent a copy of their latest animation software. **AniMagic** ($99.95) is a special effects generator and ANIM editor with all sorts of gee-whiz options. The range of effects is spectacular, including everything from shatters to flips to confetti, and color effects like masks and translucency are also possible. Paths for the effects can be specified and animations can be cropped to fit any screen size. The ANIM editing functions are no less complete, featuring A-B rolls, color editing and palette optimization for smooth transitions between segments of an animation. 2115 Pico Blvd., Santa Monica, CA 90405. 213-392-9972.

PRO SYNTH

The Other Guys are releasing **Synthia Professional**, a 16-bit synthesizer and sound processor. It uses 8 synthesizers to create 16-bit instruments with CD quality (4000Hz to 50,000Hz). Special effects like echo, reverb, shifting, and phasing can be added to your samples, which can be as long as available memory permits. MIDI utilities are provided for transferring your finished instrument files between the popular flavors of samplers. $395. 55 N. Main St., Suite 301-D, Logan, UT 84321. 801-753-7620.

ABLE AND WILLING

Inovatronics, publisher of *PowerWindows*, are releasing **CanDo**, a sort of super desktop presentation utility. Designed mainly for putting together graphics (including full screens, brushes, and even AnimBrushes from *DPaint III*) and sounds, the interactive program will also let you display text fields. It operates using an event metaphor, and complex manipulation of the defined events into full automated and/or interactive presentations is the main point of the package. It supports *ARexx* and is fully multitasking. Price is $149.95. 8499 Greenville Ave., Suite 209B, Dallas, TX 75231. 214-340-4991.



An IFF clip-art rose and an Aegis Draw version created by 3D Options.

★★★

3D OPTIONS $49.95

Rainbows Edge Productions 4412 4th Avenue, Brooklyn, NY 11220, 718-439-0299

3D Options claims to be able to convert IFF bitmapped images into structured drawings. And, within certain restrictions, it does.

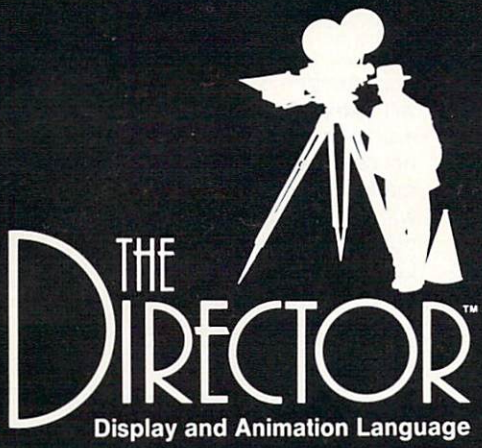
You provide *3D Options* with an IFF bitmapped image in any standard Amiga display format except HAM. Line art in two colors works best; other IFF images must be processed down to a line art representation for best results. This two-step procedure can be done with *3D Options*' Reduce Colors and Edge Find options. These options are adequate, but if you already have stand-alone image processing software such as *Butcher* or *PIXmate*, they will provide a lot more control.

To convert the image into a structured format, you simply select the Auto Pilot option from the Process menu, sit back, and watch. After no more than a minute or two, the screen will be blank and the process will be completed. At this time you can select the Draw File option to see how well the structured file matches your expectations. You can now save the file in *VideoScape, MCAD, Aegis Draw, DXF, PostScript* and/or IFF file formats. Since *3D Options* also reads a subset of some of the the supported file formats, it can also be used to transfer structured images between these programs.

3D Options fills a major gap in Amiga utility programs. It will be of particular benefit for desktop publishing applications. I awarded the program only three stars primarily because of a number of irritating bugs and the poor quality of the documentation. Both of these problems are currently being addressed. - Morton A. Kevelson

continued on page 58 . . .

Compatible with Dpaint III™ animation . . .



"If an Oscar were to be presented for Technical Excellence in Amiga Graphics, the winner would certainly be (the envelope, please) - The Director . . an exciting, unique program . . likely to become a classic . ."

Steve King,
Commodore Magazine
April 1988

"I must give The Director top marks for ease of use and capability. For the novice or serious presentation creator, this package is unequaled. It belongs on the shelf of anyone who considers himself an Amiga graphics connoisseur."

Oran J. Sands III,
Info Magazine
June 1988

. . . And that is only the beginning. *In addition to giving you frame by frame control over multiple Anims,* ***The Director*** *can add page flipping, sound, text generation, and mouse or keyboard interactivity to your presentations. Create anything from the simplest slideshow to the most sophisticated desktop video production.*

Script your production with an easy, Basic-like vocabulary. ***The Director*** *provides powerful image and memory management, blitter, text and effects control. A freely distributable player program, the Projector, is also included.*

- Use IFF images in any standard resolution including HAM and overscan
- Preload images, Anims, fonts and sounds up to your memory limit
- Basic-like vocabulary: For/Next, Gosub/Return, If/Else/Endif
- Arithmetic expressions, random number generator, variables
- Execute AmigaDOS commands from your scripts
- Fades, Dissolves, Blits, Wipes, Stencils
- Page flip full or partial screens
- Text string and file input and output
- Keyboard and mouse interaction
- Drawing and palette commands
- Digitized soundtrack module
- Supports IFF Anim playback
- PAL compatible
- Not copy protected

$69.95

DEMO DISKS
$10.00 each
Probe Sequence (512K)
RGB (1 meg)

NEW! DIRECTOR TUTORIAL VIDEO $39.95

A step by step guide to using The Director. The tape takes the novice through AmigaDOS CLI commands, script editing, adding effects to slideshows, and page flipping animation. The more experienced user will learn double buffering, effects with Anims, the sound module, the array, and advanced techniques.

TOOLKIT for THE DIRECTOR $39.95

The Director Toolkit is a disk packed with features and enhancements to expand the capability of The Director. There are new wipe routines, a palette selector, a pie chart generator and much more. The new and enhanced BLIT Utility has a powerful interface to help create Wipe, Dissolve, and BLIT operations. It also automates the process of moving an object over a background, generating a complete working script.

This disk is intended to be used with The Director software.

- New wipe routines
- Enhanced BLIT Utility including object movement over backgrounds
- Standard file requester callable from Director scripts
- Screen save from Director scripts
- MIDI input module
- Standard Anim compressor
- Pie chart generator
- Sine and cosine functions
- Card game example
- Palette selector
- Text displayer
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Magazine Index

INFO's Guide to the Best From the Rest

OBITUARIES

Commodore Magazine has announced that their October issue will be the last. Despite the fact that the it was a house organ and toed the company line, we've always enjoyed the magazine and wish Jim Gracely, Sue West, Mike Rivers, and all the rest of the staff our best. They've done an admirable job over the years.

We were also saddened to learn that Robo City News has ceased publication. Editors Mitch Lopes and Kayvan Pejooh raised RCN from the First Amiga User Group's newsletter to a nationally distributed magazine. We'll miss it.

AMIGA WORLD

As of this writing, a replacement for former editor Guy Wright had not yet been named. We'll keep you posted. The July issue starts another of AW's extremely elaborate contests. Last year it was a treasure hunt. This year it's a murder mystery set in the Saratoga racing scene, to be continued in the August issue. As magazine contests go, we have to give AW the top spot for imaginative concepts. The cover article goes into considerable detail, and even opinion, on hard drives. There's a useful ancillary piece on accelerator boards.

Amazing COMPUTING

Amazing's June issue has a separate technical section partitioned off in the center of the book, something I hope they continue. It makes wading through the techie stuff much easier when it's all in one place. INFO's own David Martin delves into Amiga disk structures. It's easier to understand than some similar attempts I've read, and provides some useful details. The issue also announces that Amazing's Buyer's Guide will be published four times a year. The menu item by menu item review of Soft-Logik's *PageStream* either ignores or glosses over the problems with the program, stating "there are no major bugs left". I, for one, am getting tired of the Bandito and his attitude problem. He comments at the end of his June column that "you can't always expect reviewers to give you a straight answer - after all, they want to keep getting free games. Get a recommendation from a friend or go see the game being played in a store." Yeah, right. Like a store doesn't want to sell you a game. Any game. And I don't see any game reviews in Amazing. Perhaps a game publisher declined to send the Bandito a free game and he's tasting a bit of the sour grape?

THE AMIGA SENTRY

A short editorial about Amiga video leads off the June issue, and that segues into a World of Commodore Los Angeles report. They weren't impressed with the show. A review of *Populous*, which is one of the two best entertainment titles released this year (*Sim City* is the other), doesn't seem to realize how important a breakthrough the game is. The reviewer likes it, but apparently doesn't understand that the game is a system simulation, instead treating it as a souped up wargame.

AMIGA USER INTERNATIONAL

While this magazine is produced in England, it is making an appearance on some newsstands here and there in the US. (It is owned by the same company which now owns *Transactor*.) It has the splashy look and large quantity of color we expect from British mags, though the content is more substantial than most. The July issue offers an interesting look at A-News, a French language Amiga magazine which Commodore/Europe fought hard over trademark and copyright issues -- somewhat typical of Commodore's historical "cooperation" with the press. Several of AUI's reviews are of products, particularly games, not yet available on this side of the Atlantic, but you can bet they will be making an appearance soon. Of special note is a review of a videodisk controller package from Ariadne Software which looks like it will bring the Amiga into the laserdisk arena in a big way. By the way, we noticed that Nancy Picard, who was the marketing director for Discovery Software is now the assistant editor of AUI; our best to her. [40 Bowling Green Lane, London EC1R ONE England]

BYTE

The July issue's cover story on GUIs (Graphical User Interfaces) actually mentions the Amiga. The piece covers the popular flavors of GUIs and is well worth reading just to gain an overview of what's going on in the industry. On Intuition's evolution, the article says it was the first multitasking graphical interface, and actually puts it in historical perspective with the Mac's system, "if the Finder is the father of desktop computer GUIs, Intuition is arguably the father of MultiFinder." Good to know that Byte does recognize the Amiga's contributions.

Commodore MAGAZINE

As for the last couple of issues of Commodore magazine, in June the results of the annual Amiga/C64 graphics contest are printed. The images show undeniably that computer art and artists are coming into their own. There's also a funny piece by Gary Fields on how to tell if you're an Amiga addict. (It's none of your business, but yes, I can stop any time I want. I just don't want to.) The July issue has a feature on actually making money with all that Amiga video hardware and software you bought. It offers some practical advice from people who are doing it, along with a detailed list of available software.

COMPUTE!'s AMIGA RESOURCE

Features editor Keith Ferrell talks to several game publishers about their favorite games in the Fall issue (which made its appearance while Spring was still blooming). It's interesting that none of them name their own titles. In the same

issue, there is a review of *Deluxe Paint III* with only two pictures, and they're both in black and white! The reviews -- and there are a lot of them -- are better than we've come to expect from Compute!, but are still less critical than they could be. A good example is Ervin Bobo's positive opinion of *Aussie Joker Poker*, generally acknowledged as a prime candidate for the worst game of all time.

COMPUTE!'s GAZETTE

The paper gets cheaper, the type-ins more repetitive, the reviews more banal, and yet there's a glimmer of hope: an interesting, though too short, feature by Cheryl Peterson in the July issue about multi-player fantasy games on the networks. There's also a fascinating sidebar in the main feature on music which tells about David Courtney, a musician who has written a program for teaching and composing Indian music on a C64. The thing even prints Sanskrit music notation!

COMPUTER SHOPPER

We had heard some disturbing whispers about the Phoenix replacement power supplies for the A500 and then came across a positively alarming article in the weighty July tome of CS. Apparently, when the CPS-500 power supply is connected to a UPS (uninterruptable power supply) and a 500, and the UPS kicks in, all three units fry. Granted, that's a rare configuration, but it's something A500 owners should be aware of, and if you have a CPS-500, be sure to read the article.

RUN

The July issue's editorial is Yet Another Pep Talk about the continued strength of the 8-bit market. We suppose they have to do that periodically, but Run's heart doesn't seem to be in it any more. The magazine itself has cut back to extremely cheap paper and gone from perfect binding to staples. The complete lack of new non-game commercial titles doesn't add much credence to their arguments either. Lou Wallace's cover feature on laser printers is worth a read, though.

Amiga Transactor

In his June ViewPort column, Larry Phillips makes a convincing case for building a standard, user-configurable file requester into the operating system. Oddly enough, after reading the piece, I found out that AmigaDOS 1.4 will include a standard requestor, though it won't be user-configurable. A must-read piece for video artists by Derek Grime contains a simple bit of advice too often overlooked in this age of easily accomplished digital effects: "Don't let the gimmicks get in the way of the message." We've all seen too many overdone videos, and it's good to hear Grime's voice of reason. Of special note in the June issue is a print demo of Radical Eye's *LaTeX*, which comes as a part of *AmigaTeX*. It is an important, underused, and sadly unrecognized text processor with book-oriented layout capability.

Transactor

If you're interested in getting started programming under GEOS, there's a clear, well-written introduction to it by William Coleman in the June issue. The same issue contains a how-to, complete with a diagram, on installing an EPROM in an REU. If I hadn't read it in Transactor, I wouldn't have believed it possible. The Title of the Bi-month award goes to Adrian Pepper's "A *glob* Function for Power C". It doesn't have anything to do with chunks of Jello, but I like it just the same.

AmigoTimes

The July issue (1.6) takes a look at Amiga music and includes a useful chart-style buyer's guide. Publisher Eyo Sama's desktop publishing column is of particular note this issue. It explains one very complicated method of rotating images and text in *Professional Page*, which doesn't yet have that direct capability. I have to take exception to the needless scaremongering in Christopher Kohler's piece on the necessity of screen filters. He cites some unconfirmed studies of health and vision problems supposedly caused by sitting in front of a CRT. The whole article comes across as little more than an advertorial for the *NoRad* screen filter (a fine product, and one we use here at INFO, but hardly the salvation of mankind).

AMnews

Mark brought back issue 1.4 from the developer's conference and I think it's mostly a case of too much effort for too little result. The issue is all interface and no substance, punctuated by occasional visits from the guru. Because publication was delayed for so long, what news is included is months out of date and the few programs are things that have been in the public domain long enough for most people who follow such things to have already seen. Issue 1.5 is promised soon.

JUMPDISK

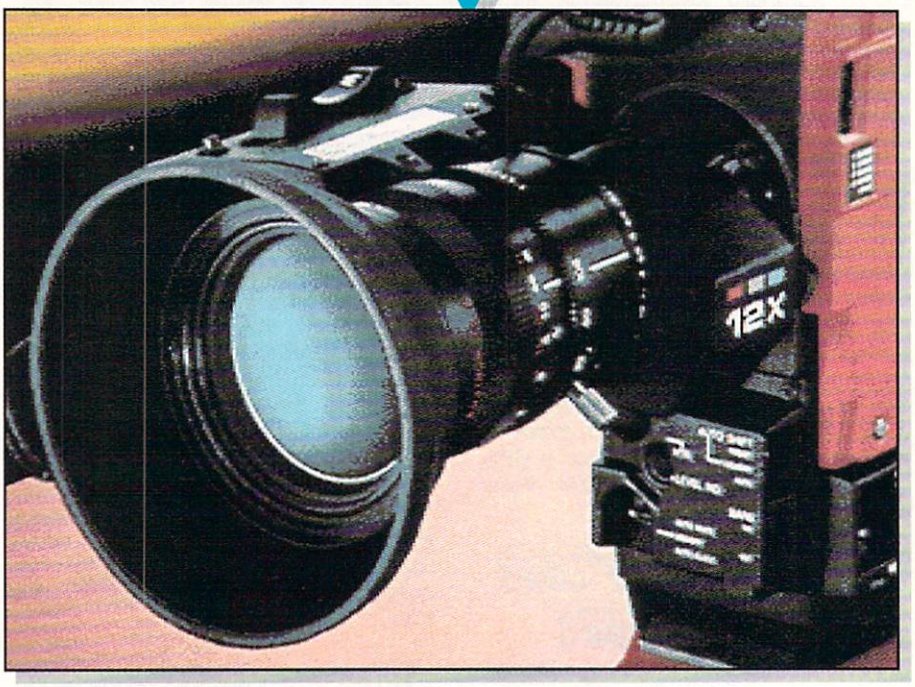
Congratulations are in order for Jumpdisk on their third anniversary issue. Disk magazines have come and gone over the past thirty-six months, and Jumpdisk is the oldest, never missing an issue and nearly always coming out on time. The last couple of issues have been a little light on the entertainment, but usefully heavy on the utilities. The July issue sports a simple to use pageflipping animation program. There aren't many bells and whistles but if you've been wanting to try your hand at putting together an animation, this will help you do it. There's also a payroll program designed for small businesses. While the initial setup requires some variable input, it looks useful and fairly straightforward.

- Tom Malcom

VIDEO BOOT CAMP

by Oran J. Sands III

All right recruits, Listen up! Welcome to Camp Pixel. I'm Sergeant Sands, your mother for the next few pages. You're here because you want to get started in video graphics, and I'm here to make sure you do. So wipe those smiles off your mugs and stay sharp!



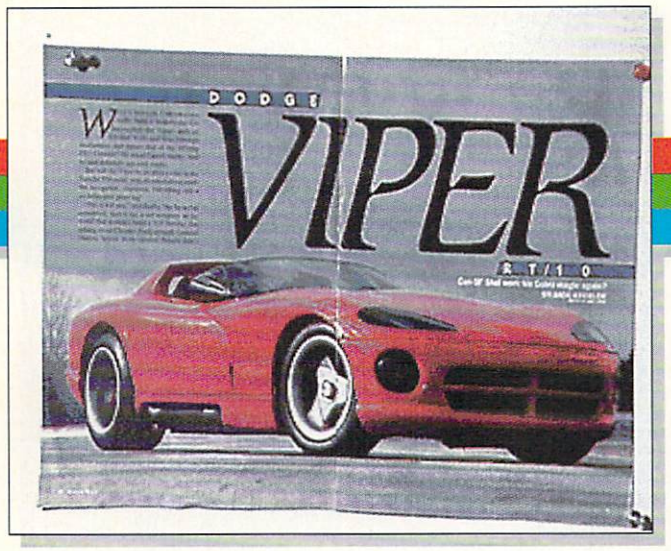
This is Basic Training. It's where you'll learn the basics. (Am I going too fast for you, Private?) We'll cover the things you'll need to properly start using the Amiga as a video workstation. You'll be shown the techniques you'll need for hand-to-hand combat with both the software and the hardware you're likely to encounter out there in the field. I'll introduce you to a full range of hardware in order to get the job done. Sometimes you'll be on your own out there, and it's my job to see that you'll be able to survive. I'm going to walk you through the choices you need to make and show you how to pick which weapon to use and when.

Ten-HUT!

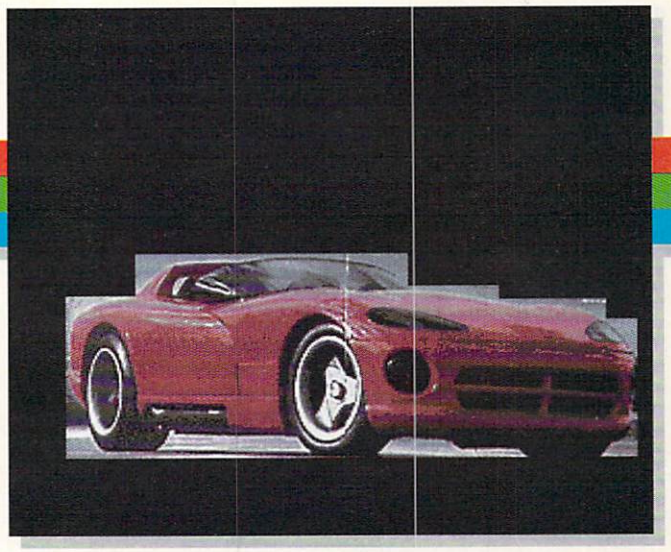
At ease men! I'm Captain Video and I'll start your training today. As your Sergeant has no doubt told you, there are many things you'll need to know in order to survive in the video production jungle. Your Amiga is well suited for battle in the video arena. Television is a visually-oriented medium (it's called a medium because it isn't rare and it's hardly ever well-done -- that's a joke, son) and the Amiga, above all other computers, can serve its country with excellence and with pride.

YOUR GUN

When getting started, it doesn't matter whether you have an A500, A1000, A2000, or a A2500. The differences are minor and they all perform the same



STEP 1: ***Digitize***



STEP 2: ***Edit***

functions. The main difference between a .22 rifle and an M-60 machine gun is how quickly you can get the job done. A sharp eye and a lot of knowledge goes a long way. The one thing to remember is that you shouldn't run out of bullets... I mean, memory. And men, you can never have enough. Most video battles, however, can be won with 1.5 to 2 megabytes of RAM. More RAM, though, will let you sleep easier at night.

DELUXE PAINT

You need to start out with a graphics program. One way or another you need to create, alter or affect graphics, and the common denominator is a good paint program. In this man's army we use *Deluxe Paint* (normally Rev. 3.0). Just hike down to your quartermaster and order 1, Program, Paint/Deluxe, Rev 3. There are other paint programs out there, but few will give you the confidence you need when caught in a crossfire.

Men, I can't emphasize enough the need to establish a close relationship with your *Deluxe Paint*. Your *Deluxe Paint* is your friend! You will sleep with your *Deluxe Paint*! You will name your *Deluxe Paint*! You take care of your *Deluxe Paint*, and it will take care of you! With the new built-in animation features, you can use *Deluxe Paint* to do just about every task you run into. It's truly an all-encompassing entrenching tool. And the techniques you'll learn with *Deluxe Paint* will drastically speed up your learning of other packages.

VIDEO OUTPUT

Once you've got a graphic, you'll need to get it recorded on tape. Assuming you've already got the necessary recording equipment (any home VCR will do), you'll need to purchase a video output device. This is supplied in two forms:

External video adapter. There are several to choose from. Read the Video Roundup reviews to decide which is best for you. These connect to the RGB port of the Amiga and will provide at minimum a composite video output. At best you'll get S-VHS outputs as well. None, however, allow simultaneous use of your normal monitor in RGB mode.

Genlock devices. These little boxes will not only provide you with a composite video output, but will also let you overlay your graphics over the top of any composite video signal from other sources. Since that's a need you'll run into eventually, it's not a bad idea to get one now and kill two birds with one stone. All genlocks allow use of your Amiga monitor in RGB mode.

DIGITIZERS

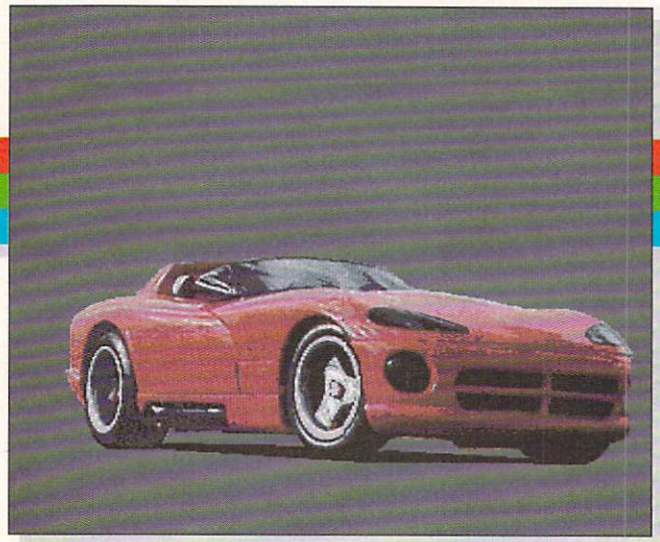
Once you've gotten the hang of putting your pics on tape, you'll want to branch out. To do that you'll need to enhance your present meager artistic talents. You can supplement your skills with the proper surveillance equipment. There are two types to be familiar with.

Digitizers, Video, Non-realtime. At present, the state of the art in non-real-time digitizers is *DigiView*, the first and still the best in its latest incarnation, Rev. 3.0/*Gold*. If you don't need to capture an image instantly, then this is your choice. It can be used with both color and black and white cameras, but don't put your life on the line with the color option. Stick with the black and white.

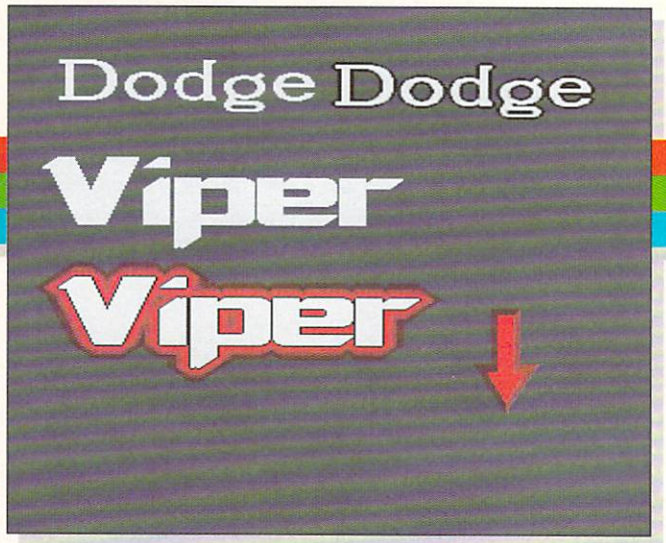
FrameGrabbers, Video, Real-time. A framegrabber will instantly capture a frame (or field) of video. This is of great value when confronted with images from videotape, camcorder, color camera, tuner, etc. If it moves, then framegrab it!

Your need for real-time digitizing and your budget will determine your choice of digitizer. Non-real-time digitizers are much cheaper than framegrabbers. What you do with your digitizer is what's important. If you can't draw the image you need, you can probably copy it. Use the digitized image as a starting point for a new image. It will dramatically increase your throughput.

The basic video soldier can do 90% of his work armed with only these few things: An Amiga of any type, *Deluxe Paint*, a genlock, and a digitizer. Regardless of which models you choose, these will serve you well. It's how you use these tools that separates



STEP 3: *Clean up*



STEP 4: *Create additional elements*

the men from the boys. (Excuse me, ladies, I mean separate the pros from the amateurs!) If you learn how to wring the last drop of functionality out of your hardware and software, you'll save yourself time, money, and embarrassment, as well as earning yourself a rep for being the best! Excuse me, soldier? Do I detect a little disbelief? Maybe an example would help.

GOING INTO BATTLE

Let's say your client demands a TV graphic of his product, the new Dodge Turbo Viper. He'd like to point out the various features and styling touches of the new car. If possible, he'd like to move the pointer while he talks about them. First off, you have several problems:

A. You can't draw worth spit! The only artist in your family uses crayons on the walls.

B. You don't own an animation package.

C. He wants it tommorow!

You could run out and buy more equipment, you could master a new program or two by tomorrow, or you could run off to South America for the rest of your life. Well, soldier, here's what you will do:

STRATEGY AND TACTICS

First, digitize the car from the client's brochure. You just saved yourself untold hours of artwork. Second, clean up the artwork with *Deluxe Paint*. You did remember to digitize in a few colors less than 32 didn't you? Because you'll need some free colors for titles and the pointer.

You can create a pointer on your spare screen. Now grab it as a brush. Go back to the first screen and save the brush. Next, load in your fonts and select one for use. Select a color that's not used for the car image. Go back to your spare screen and type out the words "Turbo Viper". Grab them as a brush. Now select a few colors as a range and spread the color red from black. While we still have the brush of the text active, we can just outline the brush with at first the red then a darker red until we have the last and darkest red. Select each color and then press "O" for outline. That's all you need to do.

Now move the brush back to the first screen and place your text brush where you needed it. With the main image done, all you need is for Mr. BigWig to narrate while you tape it. What about the real-time pointer he wanted? Load the pointer brush you made. Notice how nicely it moves with your mouse. Now re-position the handle of the brush so it's about an inch or so offset. Moving the brush off-screen is now quite easy. Get rid of the normal mouse pointer by hitting the DELETE key. Now hit F10 to remove the menu and tool bars, and you're home free.

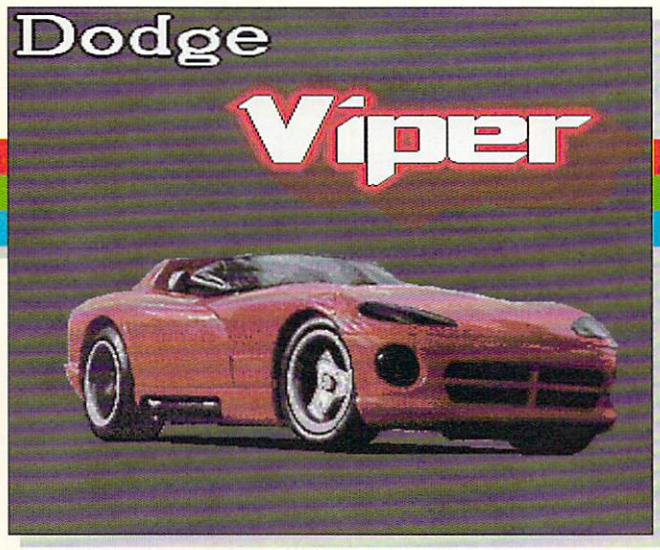
Your client can move the pointer around as he wishes, even moving it offscreen when necessary. Sure it's primitive, but it looks great, didn't cost you a cent, and shouldn't have taken you a hour or more to set up. If your client needed a non-realtime pointer you could've animated the brush motion using *Deluxe Paint 3.0*'s animation features.

The secret here, soldier, is to work smarter, not just harder. The basics will always give you 90% of what you need to get the job done. Don't go looking around for a program for just that special touch without first considering what it is possible to do with your basic armament. Don't call for an air strike when a small patrol will do.

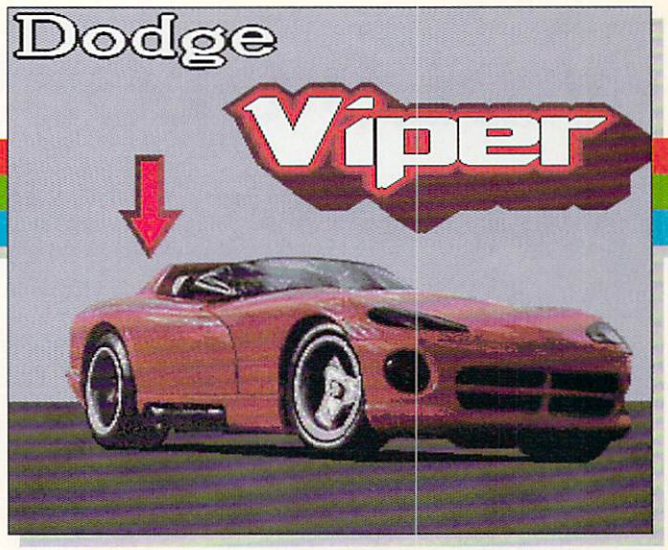
But working smart is also knowing when that air strike will save you time and expense. And knowing what types of other offensive weaponry are available will help decide what tactics to employ and when. So, for the more difficult cases, let's discuss the more complicated and specialized software.

ADVANCED ARMAMENT

Titling Software. You'll need to create a lot of graphics that, when closely examined, mostly consist of text. Pretty text, carefully manipulated text, but mostly just text. This is one of those times to call in the experts to do the job: programs written just to handle text on the screen. These tend to cost more than



STEP 5: ***Assemble***



STEP 6: ***Add finishing touches***

usual, but they can't be beat for beating back our common enemy... time! The professional video soldier would usually call for *Pro Video Gold*. It uses anti-aliased fonts, hi-res screens, and some of the cleanest fonts this side of the Warsaw Pact. It's rock-steady and reliable, a program you wouldn't mind sharing a foxhole with. And just over the horizon is *Broadcast Titler*, a very promising newcomer, though not combat-seasoned yet (but keep your eyes on it).

A full-function titler will be able to let you set up screen after screen (called pages) of text and combine them with background graphics and transitions (flip, wipe, scroll, pull, etc.) between the screens. Look for quick transitions, clean fonts with a variety of sizes of each typestyle, and ease of use.

A text slide program is a smaller version of a titler. It usually will help you in creating the text screen, but forces you to save it for displaying via a second program, possibly sold to you as a package. While functional and perhaps a little cheaper, it's slower in the long run and just not as efficient.

2D Animation Programs. Perhaps one of the more useful but also somewhat more complicated pieces of software to have in your arsenal. The ability to move brushes (small pieces of artwork) across the screen at a rate and along a path of your choosing can liven up what would otherwise be a flat, boring graphic. Some packages also allow the creation and 'morphing' of flat objects. The first program to allow this was *Animator* by Aegis, and it is still one of the easiest and most capable programs of this type. Recently, however, several programs have come out that offer these functions and more. *Fantavision* and *Zoetrope* are two such programs, and bear close examination. 90% of your animation needs could be met with these programs (although I must admit that the new *Deluxe Paint III* can serve in this capacity very well). One caveat is that many of these programs do not work in interlace mode, but more on that later.

3D Rendering/Animation Programs. These are perhaps the nuclear weapons of the Amiga battlefield. Complicated and time-consuming, they can nevertheless have tremendous impact on a client. To see your company logo spinning or flying over a 3D background can be quite a rush. But don't just fall in love with technology for technology's sake. These programs have a steep learning curve and a lot of time will go by before you can create anything resembling professional work. Even when you reach that point, you'll still spend hours and even days having the computer rendering all the frames for the animation. Obviously a time to pull out the big guns and strap on your 68020's and big RAM cards!

HAM Paint Programs. HAM (hold-and-modify) paint programs are very flexible and often loaded with features unvailable to the user of a traditional paint program. This is because you may use all 4096 colors available in the Amiga's palette. Because such an unlimited palette is available, you can find yourself faced with option glut -- just too many choices. Using a HAM paint package demands discipline and forethought for good results. While the pictures can be truly awesome, the number of other software packages that can use HAM images is very small. Stick with a standard IFF program first, then add a HAM program later.

UTILITIES

There are many small but incredibly handy programs that you shouldn't be without if you're doing graphics on a steady basis. Consider them the Swiss Army knives of the graphics world.

The Director. No video professional would be caught unarmed without this program. It's simply the tool you use to create custom applications. Once at ease with it, you'll rarely use any other package for everything from simple slide shows thru complex animations. It has the ability to use all resolutions and palettes, and to mix in animations created by other programs, plus sound. With the addition of the *Director Toolkit*, it's even more powerful. If other programs won't do what you want, then it's a good bet you can do it

VIDEO GLOSSARY

If you think you want to start dabbling in video, you might as well know what you're talking about. Use these terms to impress your friends and convince your mate that you really do use the computer for something other than games. More importantly, you'll be able converse with other video professionals and know what you're talking about.

ANALOG - There are two types of signals in this world, analog and digital. Analog means that the signal can vary smoothly and may assume any level between whatever maximum and minimum levels are used. Signals for video are usually analog in nature, but signals inside your computer are digital. (see DIGITAL)

BLACK BURST - A composite video signal that incorporates the following, at minimum: all vertical and horizontal sync timing information, color burst, and black video. The signal is actually a color signal, although the picture it produces is completely black. It contains all that is needed to genlock a video system, which is its primary purpose for existing.

BROADCAST QUALITY - A phrase that is about as easy to define as "user-friendly" and just as overused and misunderstood.

COMPOSITE - A video signal that contains both picture information (color and brightness) as well as sync information (horizontal, vertical, and color subcarrier). A noncomposite signal has only picture information and no sync.

CHROMA/LUMA - Short for "Chrominance and Luminance," the two main ingredients in a video picture. Chrominance is the color hue and saturation information, while luminance is the brightness information for the picture. S-VHS VCRs have separate chroma/luma outputs for a cleaner display. A composite video signal has these two elements encoded together, which unfortunately causes some by-products that create distortion.

DIGITAL - A type of signal that has only two levels of voltage, usually 0 volts and 5 volts.

ENCODER - A device that will take the components of a video signal and produce a composite video signal. Usually encoders accept RGB analog non-composite signals and sometimes chroma/luma signals.

FRAME - A complete video image comprised of all 525 scanlines. It is displayed in 1/30th of a second. With interlace, it is made of two fields.

FIELD - One-half of a video frame. With interlaced video, it contains either all of the odd-numbered or all of the even-numbered scanlines. Each field consists of 262.5 scanlines, is displayed in 1/60th of a second, and is interleaved with the other field.

GENLOCK - (video term) A process whereby one video device is synchronized to another, usually by feeding the sync information from one to another, either separately or in a composite video signal. The device must be capable of this function for genlocking to occur.

GENLOCK - (computer term) A process whereby a computer's output video is synchronized to an external video source. The end result is the computer's video overlaying the video, producing a combined picture.

GLITCH - This is a real video term used for quite some time to describe a momentary disturbance of the video signal.

INTERLACE - A video mode whereby the raster lines are alternately displayed on the screen, odd numbered lines first and then the even numbered lines. Each set of lines is sandwiched between the previous set. All commercial broadcast video is done this way. It must be used to perform proper NTSC-spec video. Non-interlace video is the most common type of computer video output, wherein all lines are displayed in numerical order, one after another.

KEYER - A video device that allows one signal to be overlaid upon another. (This is a great oversimplification.) All computer genlock units perform this function.

NTSC - National Television Standards Committee. These people drew up the standards that define television as we know it in the United States. The standards contain the specs for all timing intervals and levels. Uses 525 horizontal scanlines at 60 fields per second.

PAL - Phase Alternate Line. Another way to put together a video signal, used by the British and several European countries. Primarily a newer version of NTSC with a few "fixes" and more resolution. Uses 625 horizontal lines at 50 fields per second.

RGB - Abbreviation for Red, Green and Blue, the primary components of a video signal or color computer display. Video RGB is usually supplied in noncomposite form (no sync or color information, just luminance).

RF - Radio Frequency. A type of video signal like that produced and radiated from your local TV station. An RF signal is intended to be received by a tuner which will demodulate the signal back into a standard video signal. This is the type of signal that is attached to the VHF or antenna terminals of a VCR or TV.

SYNC - Short for "synchronization." Sometimes called "synch" by the those overseas (who we can forgive) and the uneducated (who oughta know better). It includes the vertical and horizontal timing and scanning information as well as the color phasing info.

SUBCARRIER - A 3.58MHz signal used to convey color information within a video signal.

VIDEO - A term describing a type of signal, used most often to describe the picture information of television or the practice of creating video signals. Common usage today is to call anything that has a picture "video," a sloppy and dangerous practice.

PRODUCTS MENTIONED:

Deluxe Paint III $150
Electronic Arts
1820 Gateway Drive
San Mateo CA 94404
415-571-7171

Pro Video Gold $299.95
Shereff Systems
15075 SW Koll Parkway, Ste G
Beaverton, OR 97006
503-626-2022

Broadcast Titler $300
Innovision Systems
PO Box 743
Hayward CA 94544
415-638-8432

Fantavision $60
Broderbund
17 Paul Drive
San Rafael CA 94903
415-492-3200

Zoetrope $140
Antic Software
544 2nd Street
San Francisco CA 94107
415-957-0886

The Director $70
Right Answers Group
PO Box 3699
Torrance CA 90510
213-325-1311

Butcher $37
Eagle Tree Software
PO Box 164
Hopewell VA 23860
804-452-0623

Pixmate $50
CLImate $40
Diskmaster $50
Progressive Peripherals & Software
464 Kalamath Street
Denver CO 80204
303-825-4144

with this. Although it is more of a programming language than a program, it is very flexible.

Butcher. There comes a time when you need to change your graphics in a way your paint program won't allow. Rather than wish for more features, you can just call for the *Butcher*. With it you can turn a picture into shades of gray, or reduce the number of colors in the palette, or merge several colors together, or remove those annoying single pixels from a digitized photo, or exhange one color for another in the palette, or... well, you get the idea. If you can't plan ahead, then ask the *Butcher* to cut out those mistakes.

Pixmate. Same type of program as the *Butcher*, but faster on many operations and offers several more functions. The downside is that it isn't quite as intuitive to use. You should have both programs to give you a full complement of abilities.

Directory Utilities. Let's face it, you're gonna get KP duty eventually, so get a directory utility program to expedite cleaning up those disks and rearranging those files. Copying, listing, deleting, reading, and showing files is infinitely easier with a D.U. Get one from the public domain, such as *Utilimaster*, or buy one like *CLImate* or *Diskmaster*.

DEBRIEFING

That's about it for this session, but before we break for the mess hall, I'd like to leave you with a few tips and hints from an old soldier who's been there and made it back.

Interlace. If you are doing work for video, then choose those resolutions that force the interlace on, i.e., 320x400 or 640x400. Although you can record non-interlace signals, you won't be able to edit them, genlock to them, or otherwise combine them with standard NTSC video signals, which are always interlace. Besides, many TVs won't display non-interlace pics without jittering. If your program only supports non-interlace modes, then run *Setlace* (a public domain program) before running the program. This will force the output of the Amiga into interlace. A small jerkiness in the display may result, but it's better than the alternative.

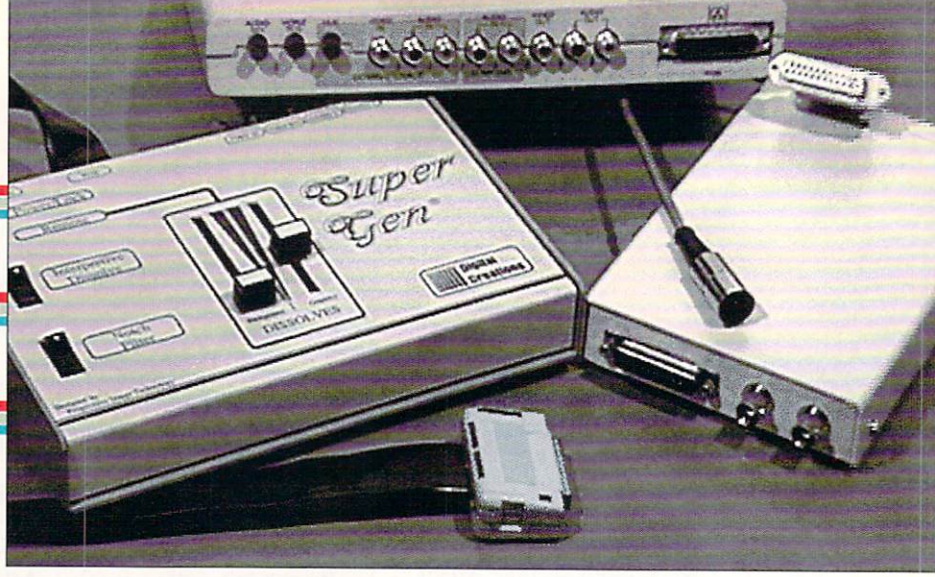
Overscan. Overscan modes are great if you can use them, but they have their cautions. Don't use an overscan mode more than 384 (or 768 in hi-res) pixels wide when using the video for broadcast work. It forces the horizontal timing to exceed NTSC specs. If you digitize in this size, that's OK; just load it into *Deluxe Paint* and then choose a screen size smaller than that (i.e. their "video" size 704x480). Saving it after that assures the correct size. If you're trying to create a picture that covers the screen from side to side, use 704 x 480 (or 352 x480) *DPaint*'s default "video" size. That's adequate for coverage and is somewhat smaller in filesize when storing.

File Storage. Concerned about file sizes? Use a palette with as few colors as possible and make the backgrounds as plain as you can. With digitized pics, repaint areas that have heavy dithering and remove unnecessary material. With pics with a constant background color, overscan mode doesn't give you any advantage and increases the file size.

Color choices. When choosing colors or customizing palettes, make a point of keeping the color saturation levels at or below 75% of the possible maximum (that's 12 out of 15). This will ensure less color bleed in the pure colors, especially red. Try to avoid a 100% white, and use 75% when possible. Titles to be genlocked over video will stand out better if outlined with a contrasting color such as black for white letters (the new brush outline feature in *Deluxe Paint III* is great for this). If your white lettering looks "rainbowed", then change it to a light beige or blue. The added color value will not change the look of the letter but will stop the "rainbow", To avoid "crawly" edges, try to avoid transitions from color to color that are greatly different in contrast (brightness levels). Reduce the "stairstep" look on your fonts by placing pixels of color halfway between that of the background and that of the letter -- get that anti-aliased font look for free!

Well, men, that wraps up today's lecture. Sgt. Sands will escort you to your barracks. Careful study of the official manual of arms on the next few pages should answer your remaining questions.

Dismissed!



VIDEO HARDWARE ROUNDUP

by Oran J. Sands III

Today's explosion of video equipment for consumers has dramatically increased the number of persons wanting to use the Amiga for video applications. At the same time it has broadened the range of what users can pay for Amiga peripherals. Make sure that you pay no more than you need for the functions you desire; on the other hand, don't pay too much for features that you don't need. In order to help separate the wheat from the chaff, here's our roundup of video-related hardware accessories for the Amiga. Remember, you usually do get what you pay for!

VIDEO ENCODERS

All Amigas produce a standard RGB analog non-composite signal that looks great on a monitor but can't be directly fed to a VCR or television. To correct this oversight you need a way to create an NTSC composite video signal from the RGB. The usual broadcast color encoder would cost you 1-8 thousand dollars! Fortunately there are several less costly alternatives for the Amiga owner. The usual video encoder for the Amiga can provide at minimum an NTSC video composite signal, and at best provide an RF (VHF) signal for TVs, as well as S-VHS outputs. Unless otherwise noted, none of these units allows simultaneous use of your Amiga monitor in RGB mode.

C-VIEW I & II

$49.95 ★★+

C Ltd., 723 E. Skinner, Wichita, KS 67211, 316-267-6321

C Ltd. makes a number of video adaptors, some with composite video out and some with separate chroma/luma signals. The most outstanding feature is their size -- all units are housed within a single DB-23 connector shell. This also restricts the amount of circuitry, which is the main reason for the rather low-quality video output and the low cost.

ENC-1 $395 *not tested*

Communications Specialties Inc., 89-A Cabot Ct., Hauppauge, NY 11788, 516-273-0404

RGB to composite encoder.

A520 VIDEO ADAPTOR

$49.95 ★★★

Commodore, 1200 Wilson Drive, West Chester, PA 19380, 215-431-9100

Commodore's own encoder provides both a composite signal and an RF signal. It is designed to slide along the tabletop and connect to the RGB port. The outputs are composite video and a Channel 3 or 4 RF signal. An audio input is included so you can hear your Amiga as well as see it on a standard TV. The output is clean, although the color portion of the signal is somewhat low (which isn't an altogether bad thing for most users). A handsome design that works well.

CMI VI-500, VI-2000, /RF

$79.95 ($99.95 w/RF) ★★★★

Creative Microsystems, Inc., 19552 SW 90th Court, Tualatin, OR 97062, 503-691-2552

These units provide a color composite signal and separate chroma/luma outputs for use with either the 1702-style monitor inputs or S-VHS. There is an enclosed steel box version for the 500, 1000, or 2000, and a special "card" version for the 2000 video slot. The circuitry is the same for all. A second version of the VI-500 and VI-2000 units is available with RF channel 3 or 4 output in addition to the others. The output is clean and very accurate on all levels.

GENLOCKS

Computer genlock units give you the ability to combine your Amiga graphics with another video source. Units vary in the quality of the video signal, flexibility, and features. Some are intended only for use in the Amiga 2000's video slot.

MINIGEN

$224.95 ★★★

Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204, 303-825-4144

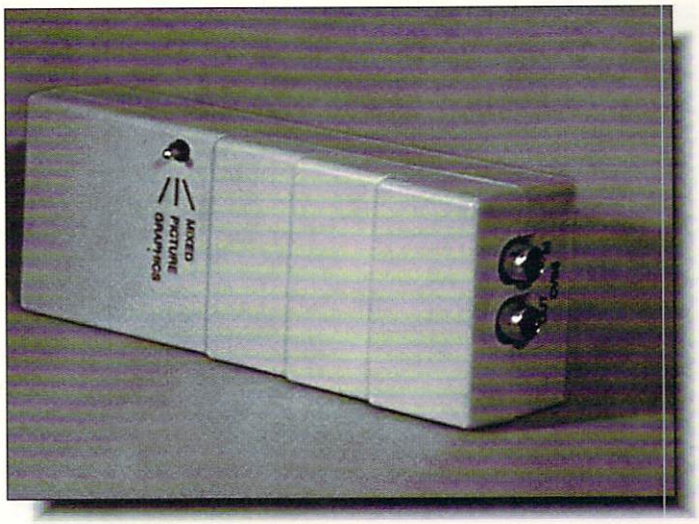
This unit is new and should be for sale as you read this. Based on the circuitry of the Progen (see next review) the MiniGen provides a very clean and accurate signal and genlock function at a budget price. It does not provide an RGB-to-monitor connection, but gives you a video in and a video out via RCA jacks (which are set a little too close together). The video out signal is switchable between the incoming video, the Amiga, or the combined picture. The MiniGen is packaged in a long skinny box which attaches directly to the RGB port of your Amiga, but it has no way of being securely attached. At this price the MiniGen is the genlock of choice for the quality-conscious amateur user on a very tight budget.

PROGEN

$499.95 ★★★★

Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204, 303-825-4144

The ProGen is a simple yet high-quality genlock suitable for professional work. It connects to the RGB port by a 3" ribbon cable. This lets the unit "hang" off the back of the Amiga, which is a bother. It uses BNC connectors for the video in and video out signals. The signal quality is very good. The overlay function can be turned on and off by a separate connector that can be wired to the parallel port and software selected, or be selected via hardware switches. The driver software is supplied in two versions, the difference being which set of hotkeys is used to trigger the functions. Both run "in the background" which allows use with programs such as *Pro Video Gold* or *Broadcast Titler*.



The MiniGen genlock from Progressive Peripherals & Software.

Several output modes are available. An excellent genlock for the price.

AMIGEN

$179.95 ★★✛

Mimetics, 10750 Stevens Canyon Rd., #2, Cupertino, CA 95014, 408-741-0117

The Amigen is one of the least expensive genlocks on the market. At this price almost anyone can afford a genlock. The Amigen is a small case that securely attaches to the RGB port and allows your monitor to be connected (although only with a special cable not supplied with the unit). There is no way to turn off the overlay feature of the Amigen; it's on all the time. The video in and video out connectors are RCA phono style. This unit's signal quality is adequate for home and hobbyist use, but definitely not for the serious amateur or professional.

SUPERGEN

$750.00 ★★★★

Digital Creations, 2865 Sunrise Blvd., Suite 103, Rancho Cordova, CA 95670, 916-344-4825

The SuperGen costs more but has more to offer as well. The quality output is controlled by a pair of sliders that allow you to control the overlay. You can dissolve the picture from video to Amiga or fade the overlay on and off if desired. There are two identical outputs from the SuperGen which allow feeding the signal to a separate monitor for preview while using the other to feed a recorder. An external "key" signal is provided for those that can use it. Many programs can drive the functions of the SuperGen by software. The unit is connected to the Amiga by a long, shielded ribbon cable, allowing placement of the controls where they'll be handy. All connectors are BNC.

SCANLOCK $995 *not tested*

Vidtech Corp., 2822 NW 79th Ave., Miami, FL 33122, 305-477-2228

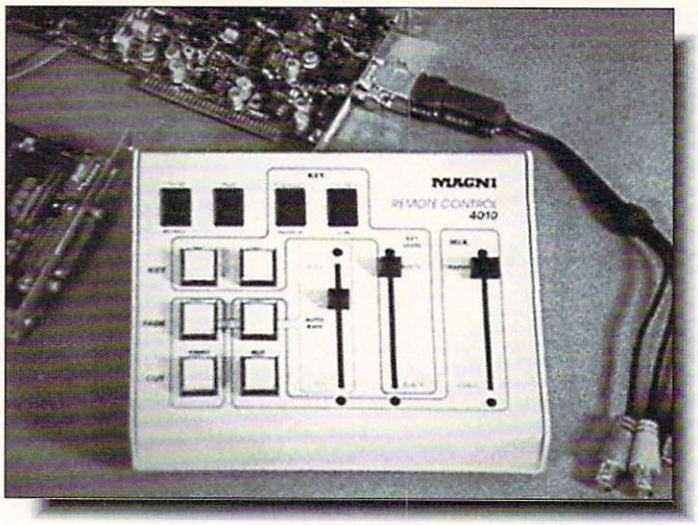
Switchable NTSC and S-VHS genlock with independent faders for Amiga and video inputs, and claimed glitch-free editing. Optional power supply for overloaded Amiga systems. PAL version available for $100 more.

GEN/ONE

$849.95 ★★★★

Communications Specialties Inc., 89-A Cabot Ct., Hauppauge, NY 11788, 516-273-0404

The Gen/One is an attractively cased, higher priced genlock that has a very clean signal but few bells and whistles. It attaches to the Amiga RGB port with a very short cable, making placement of the box difficult. The front panel houses switches for seven modes and selection of output as well as adjustments for the individual red, green, and blue components of the Amiga signal. The Amiga signal's horizontal phase and subcarrier phase in relation to the input signal can be adjusted (this is not the same as system timing delay adjustment). A chroma/luma output is also available.



Magni 4004 genlock with 4010 remote control unit.

MAGNI 4004
$1695 ★★★★★

($1995 with 4010 remote control)
Magni Systems, 9500 SW Gemini Dr., Beaverton, OR 97005, 503-626-8400

This is the king of the genlocks. It's manufactured by a broadcast company, not a computer company, and it shows. The signal could hardly get any better. The Magni 4004 consists of two cards for the A2000, one for the video slot and one for an IBM slot (in order to get power, not data). They connect together and may be connected to an external remote control box. Outputs are video out, external key out, Amiga only out (for preview purposes), and black burst out. It has several different modes of operation which should assure its ability to fit your particular use. It is also capable of being operated via software control, and that software is included. Unfortunately, it depends on using the function keys for "hotkeys," which may conflict with whatever other software you may be using. The manuals are complete but a bit inaccessible. Professionals may wish to wire up their own remote control, which is very simple. Timing into a professional system will have to done with external delays; no such adjustments are provided.

AMIGA 2300
$499.00 ★★★✛

Commodore, 1200 Wilson Drive, West Chester, PA 19380, 215-431-9100

The 2300 genlock is Amiga's follow-up to the late, unlamented A1300. Unlike that unit, though, the 2300 is a very nice design. It is intended for use only with the Amiga 2000, and slides into the video slot. The 2300 has RCA connectors for the video in and out, and a switch that will allow your monitor to display the Amiga picture, the video input, or the Amiga overlaid with the video input, just like the old 1300 did. Intended (by Commodore's own admission) for the home user. The signal quality is clean but levels are not to spec.

IMAGE MASTER
$2200 *not tested*

Neriki (Distibuted by Compu-Art), PO Box 712, Victoria Station, Montreal, Quebec H3Z 2V8, Canada, 514-483-2080

Professional-quality rack-mountable genlock features a variety of controls, inputs, and outputs. Connectors are all BNC. Unit requires external sync. Two other models of similar quality are planned, one in the $3000 range, and one in the $1000 range.

VIDEO DIGITIZERS

While the rest of the computer world uses flat-bed scanners to input artwork into a computer, the Amiga mainly depends on video sources and digitizers, devices and software that will convert a TV signal into an IFF or HAM file. Unlike most flatbed scanners, they can produce wonderful color images as well as providing the flexibility of digitizing live three-dimensional objects. Some need as much as a minute to digitize from a video signal. Others (known as framegrabbers) need only 1/30th of a second.

PERFECT VISION
$219.00 ★★★

Sunrize, 3801 Old College Rd., College Station, TX 77801, 409-846-1311

This framegrabber grabs b&w video frames in realtime, and can digitize color frames in non-realtime when used in conjunction with camera color filters (included) or Sunrize's optional RGB color splitter ($120, also compatible with *Digi-View*). This is the least expensive realtime framegrabber on the market. Does overscan, but does not do hires width. Can grab sequences of frames for "Max Headroom" type animations, and has a nice four-frames-at-once preview mode. Our unit seems somewhat level-sensitive, but the quality of the output is very good.

FRAMEGRABBER
$699.95 ★★★★

Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204, 303-825-4144

The Framegrabber is a full-range framegrabber, operating in all resolution modes, with HAM and overscan as well. It digitizes in 1/30 of a second (one video frame) so your source of picture may be videotape, color camera, or TV tuner. The software has built-in timelapse recording features, multiple exposure and animation capabilities (ANIM standard). A trifle expensive, but a do-everything unit for the video pro. New Framegrabber 2.0 software with numerous new and improved features is due by the time you read this.

LIVE!
$299.95/A1000, $399.95/A500, $450.00/A2000 ★★✛

A-Squared, 6114 LaSalle Ave., Suite 326, Oakland, CA 94611, 415-339-0339

The LIVE framegrabber was originally designed to digitize a picture as fast as possible and then display the picture on the Amiga monitor as an IFF file. This approach forced them to optimize the picture processing for speed, not accuracy, and it shows. The resultant pictures don't look much like the original. On the other hand, you can use Live! to create some really neat "MTV" style colorization effects in real-time -- an Amiga video processor, so to speak. Other developers have written software

to use the Live! unit for such effects as well. Inexpensive for a framegrabber, and it has its uses, but not for digitizing critical work.

VD-1 $1000 *not tested*

Impulse, 6860 Shingle Creek Pkwy., #110, Minneapolis, MN 55430, 612-566-0221

24-bit framebuffer will grab full-color images in 1/30 second. Includes *Diamond* paint program.

DIGIVIEW GOLD 3.0

$199.95 ★★★★

NewTek, 115 W. Crane, Suite B3, Topeka, KS 66603, 913-354-1146

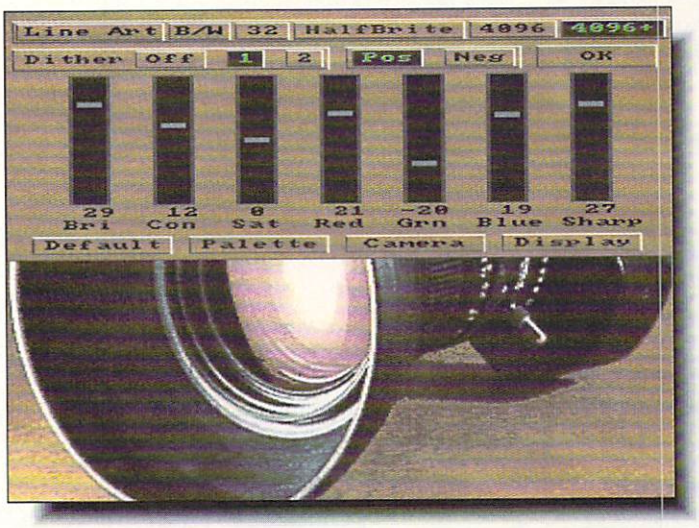
The first and still the best in video digitizers, DigiView's hardware was recently upgraded to perform better with the 2000 and 500, and the software has also undergone a bit of rework. For its price, no Amiga video user should be without it. DigiView digitizes from still subjects -- no instant framegrabbing here. Works best with black & white cameras, but color cameras can be used.

FRAMEBUFFER

$1289.00 ★★★✛

Mimetics, 10750 Stevens Canyon Rd., #2, Cupertino, CA 95014, 408-741-0117

Mimetics has the first framebuffer available for the Amiga. A framebuffer is a device that will create a video display with a larger palette and often higher resolution than native Amiga modes. The Mimetics framebuffer uses 16.7 million colors and has a resolution of 746x484. The Framebuffer is also a framegrabber, but it needs two frames of video to digitize a video signal. This can cause an annoying jitter if the picture has much motion, although the software can compensate for this. The documentation supplied with the unit is sketchy. This unit is a card that fits into a standard 2000 expansion slot and has a composite video output. Problem is, there is very little software available to create 24 bit files at present; the most notable is *Sculpt-Animate 4D*. This situation is aggravated by a lack of a 24 bit file standard. The unit seems slow in converting data into a picture, but the image is very nice.



Color control requester in NewTek's DigiView Gold.

COMING SOON

This group is reserved for equipment that's been announced but hasn't made it to market yet. We won't insult you by mentioning possible release dates.

FRAMEGRABBER 256 $699.95

Progressive Peripherals & Software, 464 Kalamath St., Denver, CO 80204, 303-825-4144

This is a special version of the Framegrabber that will create 24-bit RAW files and be able to display monochrome pics in 256 gray scales. Attaches and functions much as the same as the current Framegrabber. Special color modes for medical/scientific applications.

PVA PROFESSIONAL VIDEO ADAPTOR $ N/A

Commodore, 1200 Wilson Drive, West Chester, PA 19380, 215-431-9100

Announced at the '88 Spring Comdex, the Professional Video Adaptor is Commodore's answer to everyone's desire for higher level graphics. It should provide a larger palette and instant frame grabs as well as some special "digital" effects. This is a two-card unit that takes up an expansion slot and the video slot in an A2000. It's been in alpha testing for the last two years.

VIDEO TOASTER $1595

NewTek, 115 W. Crane, Suite B3, Topeka, KS 66603, 913-354-1146

The Video Toaster, of course, is the box everyone's been waiting for. The Toaster will be a video special effects unit, using the Amiga to control it. The list of what it will do has grown with each press release and public demonstration. Current specs include four software-selectable video inputs, and a wide range of software-driven professional ADO effects. If it does half of what New Tek says it will and only half as well, it should be quite a deal for the price.

VMACHINE/SUPERGEN 2000S $1595.00

Digital Creations, 2865 Sunrise Blvd., Suite 103, Rancho Cordova, CA 95670, 916-344-4825

Recently announced by the makers of the SuperGen is their new video workstation, which will be based on an S-VHS compatible genlock unit with an expansion port for the connection of special modules for framebuffering with higher resolutions and palettes, digitizing in 24-bit color, and special effects processing. Special 24-bit paint software is also to be offered.

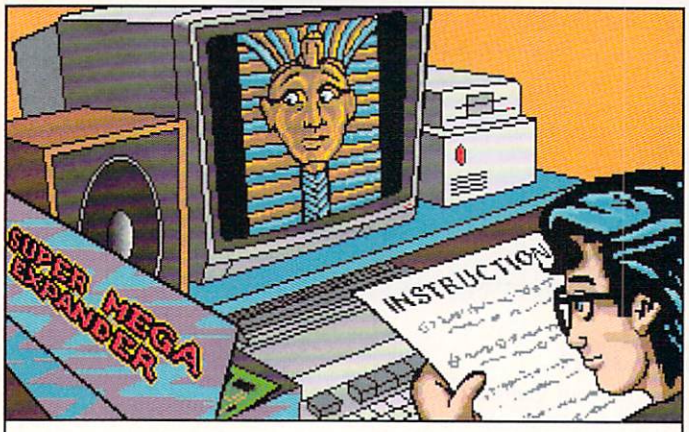
VIDEO OUTPUT FRAME BUFFERS

This is merely a generic notation for all of those 24-bit graphic video output boards everybody keeps telling me they are working on or considering. Not a one of them has made it to market. One possible problem is that there is no software for the Amiga, like the professional *TIPS* or *Lumena* packages, to use with them. Of course, no one will write software until there's hardware, so it's a Catch-22 situation for the time being.

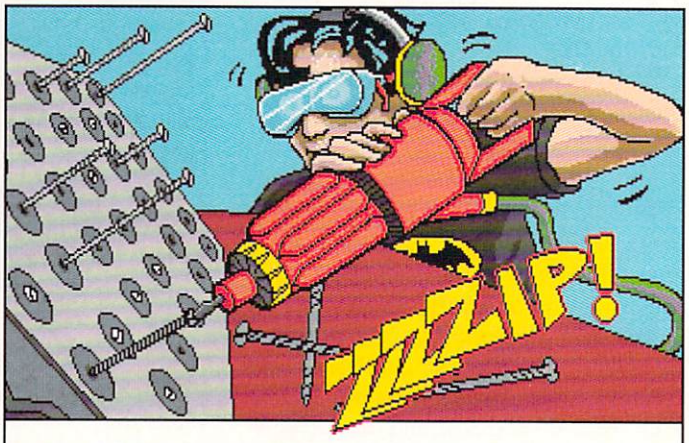
★

BRYCE EXPANDS HIS AMIGA

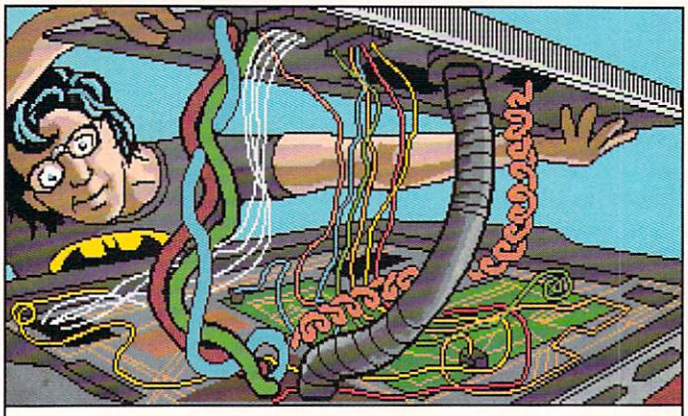
ART: Gregory Conley
CONTINUITY: Mark R. Brown



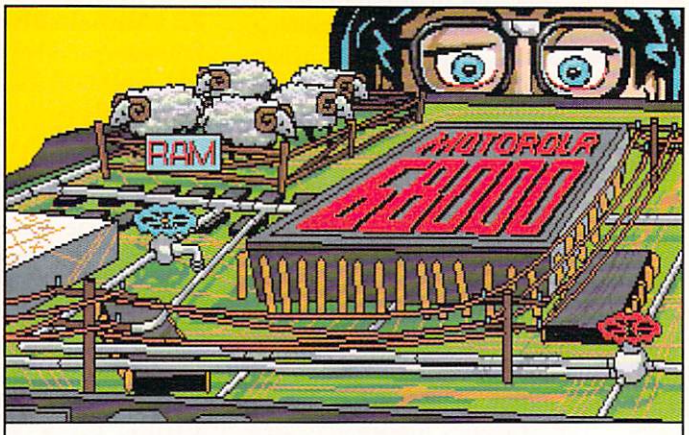
1) Turn off your computer and unplug all peripherals.



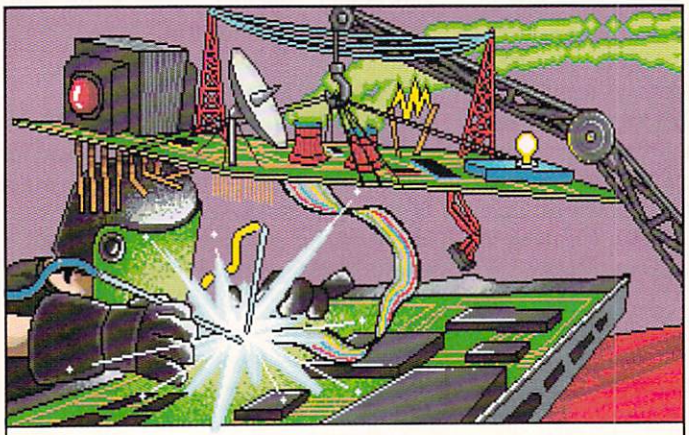
3) Remove case mounting screws C100 through C150.



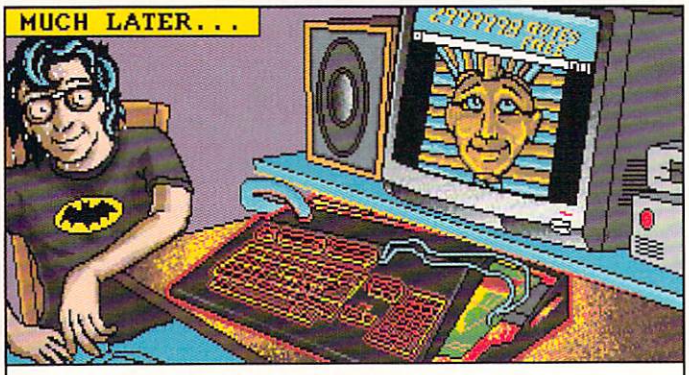
6) Carefully unplug the keyboard connector cables. Note their orientation.



9) Locate and carefully remove the CPU chip.

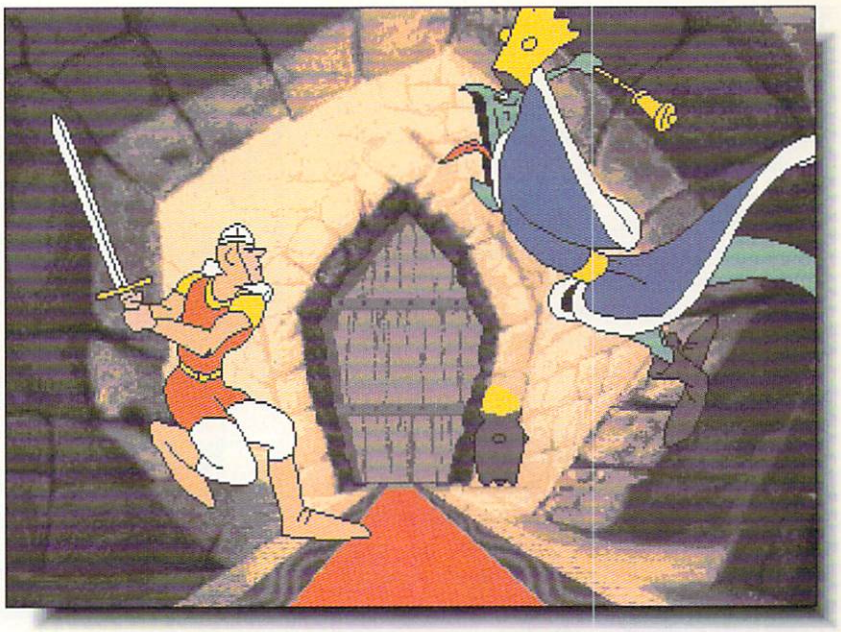


13) Insert board gently into empty CPU socket.



18) That's It! Your Super Mega Expander is now installed! (Your computer may run a bit warmer than before. That is perfectly normal.)

Gregory Conley can be contacted by writing: Gregory Conley, 17320 Laverne Avenue, Cleveland, Ohio 44135



DRAGON'S LAIR II

PREVIEW

Visionary/Media Technology
15235 Shady Grove Rd., Ste. 100
Rockville, MD 20850
301-926-8300

Just when you thought you'd finally rescued Daphne from the dragon, along comes Singe's owner (talk about peculiar taste in pets!) and kidnaps her again. Fortunately for the player, the irritations of the first *Dragon's Lair* have been addressed and eliminated. *DL II* can be installed on a hard drive, is compatible with the 68010, 020, and 030, multitasks peacefully, and can be linked with *DL I* for a total of nearly 20 minutes of continuous playing time. The load times have been improved, so you won't have time for a six-course dinner between rooms any more, and "flipping" can be turned off so that you only have to play each room once. There's also a help mode that displays directional arrows at the bottom of the screen to show where you need to be (a reviewer's dream come true), and your current position can now be saved.

The artwork (done by Jeremiah, Timothy, and Michael O'Flaherty) in the screens that I've seen retain the flavor of the originals, though I find them more detailed in a subtle sort of way. From everything I've seen, the sequel will outshine the original.

- Tom Malcom

ARCHIPELAGOS

★★★★★

Logotron/Britannica
345 Fourth Street
San Francisco, CA 94107
415-546-1866

Archipelagos is such a departure from the ordinary that the concept alone is worth the five star rating. At the beginning of the game, you find yourself on a watery, deceptively peaceful, alien world populated by strange animated trees and even stranger creatures. There is a large black obelisk dominating the landscape, and some standing stones here and there. The trees are spreading a red poison across the land. To escape, you must build land bridges to connect the stones to the obelisk; that is the only way they can be destroyed before the poison spreads.

The first few of the 10,000 levels of *Archipelagos* are very easy, with the stones already connected to the obelisk, but as you progress through these island worlds, mere survival becomes a frenetic challenge. (I've spent a week trying to get past level 25.) The graphics are wonderful, the music compelling, and movement around the archipelagos fluidly smooth, with some of the best scrolling I've seen. It's probably not for everyone, but its otherworldly feeling makes *Archipelagos* a game I will keep coming back to.

- Tom Malcom

You're Ace Harding, private eye, and it worries you that you seem to be making a habit out of waking up in strange bathrooms, this time in a seedy hotel/casino in Las Vegas. As in the first *Deja Vu*, time is of the essence. You have only seven days to explore the City of Excitement, avoid the thugs following you, and solve the mystery of who absconded with Tony Malone's ill-gotten gains. Otherwise, you'll have to cough up the 112,000 big ones yourself before ruthless gangsters play craps with your face.

DVII retains all the atmospheric intensity and period charm of the original, as well as the trademark point-and-click ICOM interface. There are windows and icons for everything -- graphics, inventory, text, and movement are all visible at a glance and accessible with a click. ICOM has developed probably the most playable interface for graphics-oriented adventures.

Deja Vu II's colorful, intuitive interface and gripping, mysterious storyline combine to make this game another solid winner from Mindscape.

- Judith Kilbury-Cobb

DEJA VU II:
LOST IN LAS VEGAS

★★★★+

ICOM/Mindscape
3444 Dundee Road
Northbrook, IL 60062
312-480-7667

FRIGHT NIGHT

★★★★

Microdeal
576 South Telegraph
Pontiac, MI 48053
313-334-8729

Fright Night is one of the rare examples of a movie being made into a game that actually captures something of the flavor of the original. The plot of the film was nothing that hasn't been done before (teenagers trying to destroy the vampire who has moved in next door), but it was done with humor and style, along with the requisite blood and gore special effects.

The game has you taking the part of the vampire and that, of course, means you have to find victims in order to survive. Those potential victims are, unfortunately, bent on your destruction. Survival becomes more and more difficult as the nights pass.

The graphics are exquisitely detailed, depicting the gloomy, elegant rooms of a Victorian mansion, and the sound effects perfectly chosen. There isn't a lot of depth to this arcade adventure, but so many little touches add to it (like a belch after you finish with a victim!) that it moves from horror to humor. And that is what makes the game so playable.

The humor of *Fright Night* is strictly junior-high, but most of us enjoy a little junior-high silliness now and then. - Tom Malcom

While I wait for the ultimate golf simulation, *Jack Nicklaus' Greatest 18 Holes of Major Championship Golf* (is that a mouthful of title or what?) will help me wait patiently. Though it is easily the best-playing of all the golf simulations I've seen, the graphics are still not what they could, or should, be. The play system is the same three-click method used in Accolade's *Mean 18*, with a full-sized power bar up the left side of the screen. It's a good system, allowing fine control over not only the power of the shot, but also permitting deliberate hook and slice. I only wish I had that much control over my real-life golf game!

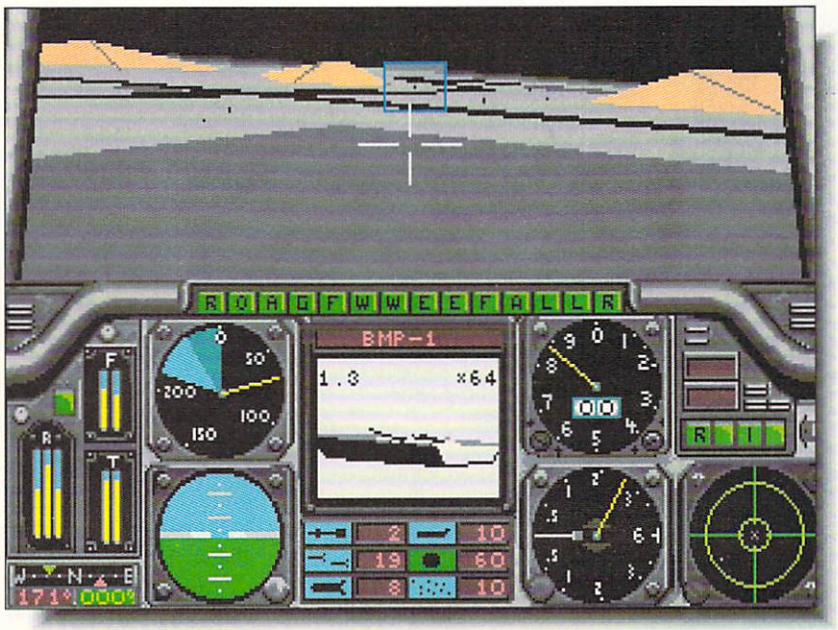
There are three courses included (and additional course disks are coming), one of which is made up of the Golden Bear's choices of the best holes from tournament courses. In fact, a picture of Jack appears at the start of each hole and he offers advice on how to play it. I only wish there were some way to turn him off; the advice is good, but it slows down the play considerably. The best choice yet for people who like to play real golf.

- Tom Malcom

JACK NICKLAUS

★★★★+

Accolade
550 S. Winchester Boulevard
San Jose, CA 95128
408-985-1700



GUNSHIP

★★★+

MicroProse
180 Lakefront Drive
Hunt Valley, MD 21030
(301) 771-1151

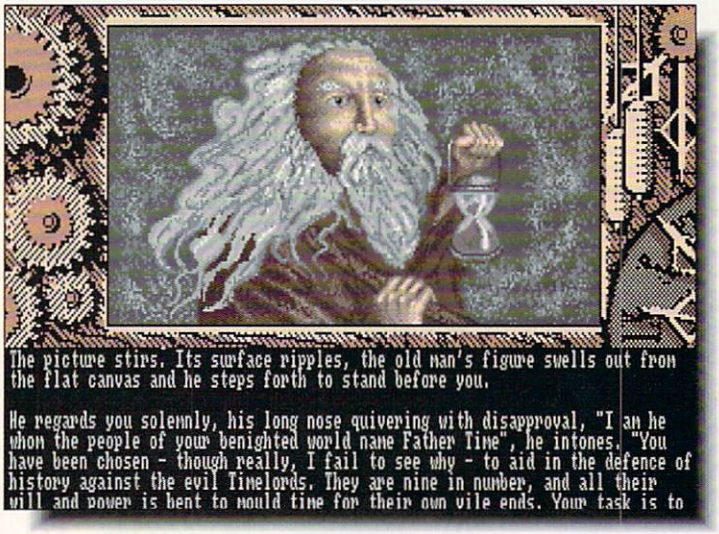
Nearly four and one half years ago, MicroProse announced *GUNSHIP, The Helicopter Simulation*. Two years later, when it finally shipped for the C64, it was state-of-the-art, and earned our highest rating (see INFO #13, Jan/Feb '87, pg. 15). Now, after another 2 year delay, we have *GUNSHIP* for the Amiga. What a letdown. Compared to winged flight simulations like *FALCON, F/A-18 INTERCEPTOR*, and *JET, GUNSHIP* for the Amiga is flat and uninspired (and these have been around for some time now). The graphics are standard issue cockpit fare (less realistic than most). The audio consists of some rudimentary monophonic engine, weapons, and explosion sounds, (and if any of these sounds are sampled, they sure fooled me). Put simply, *GUNSHIP* looks like an IBM game, sounds like an IBM game, and plays like an IBM game. Let me point out, for those who don't already know, that this is not a compliment. The game play *is* pretty detailed with several mission scenarios, and MicroProse's typically detailed manual and keyboard overlays, but after four years, *GUNSHIP* could have been, and should have been so much more. - BD

ARTHUR

★★★★+

Infocom/Mediagenic
3885 Bohannon Drive
Menlo Park, CA 94025
415-329-0800

Loosely based on the Arthurian legends, this adventure follows the young Arthur on his quest for Excalibur. On-screen mapping, richly detailed graphics, a myriad of puzzles, and the best parser in the business are only some of the strengths of this excellent adventure. Don't, however, expect to walk through *Arthur* easily even if you know the legends by heart. Infocom has taken enough poetic license with the old tales to make this a difficult game for even the most diehard King Arthur fans. - JKC

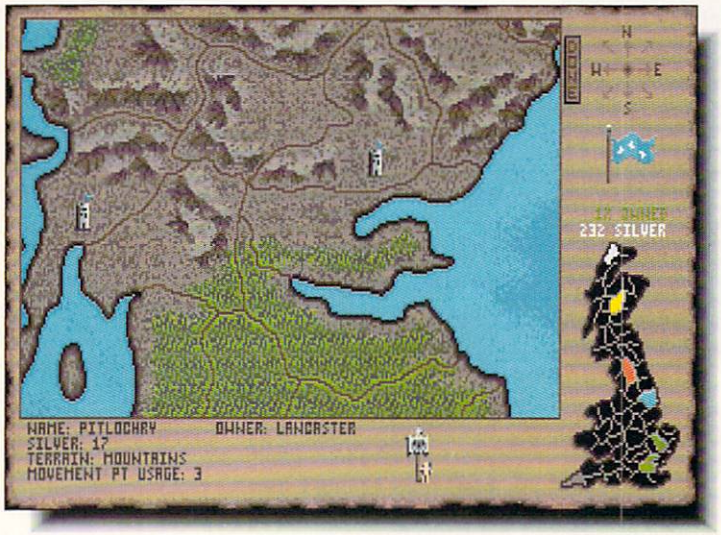


TIME AND MAGIK

★★★+

DataSoft/EA
1820 Gateway Drive
San Mateo, CA 94404
415-571-7171

This illustrated text adventure encompasses three separate episodes from the struggles of the Guardians to protect both Time and Magik (hence the title). The text parser complicates movement through its somewhat vague directional discriptions, but the illustrations are plentiful and beautiful, and they genuinely complement the mystical mood of the story. An included clue book and multiple undo function help make adventuring forward and backward in time a little easier. These three enjoyable adventures will fill your free time with magik for quite a while. - JKC



KINGDOMS OF ENGLAND

★★★

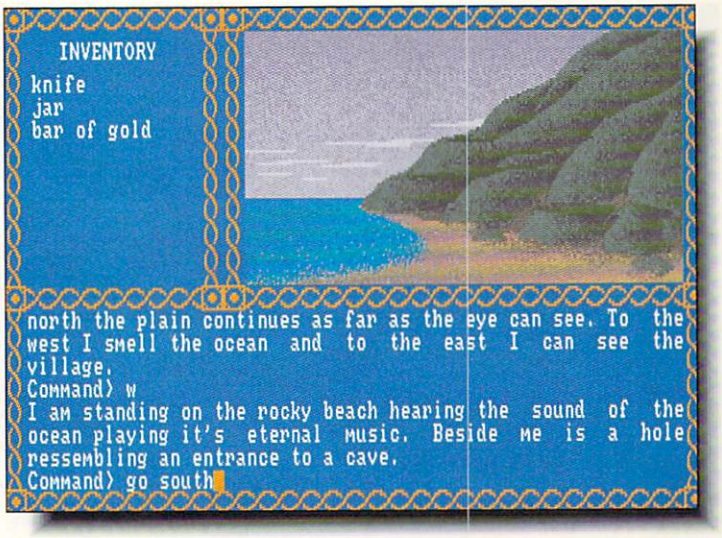
Incognito
34518 Warren, Suite 149
Westland, MI 48185
313-462-2148

I have never seen a game so badly in need of a tutorial. The manual is filled with incomprehensible technical details, and nothing on how to go about playing the game. And as far as playability goes, this game makes *Defender of the Crown* (which it unsuccessfully emulates) look like *Arkanoid*. Though it's almost completely mouse-driven, the controls are about as intuitive as the theory of relativity, sometimes using the left button and sometimes the right, but with no consistency. The graphics are beautiful, but graphics alone aren't enough to make this medieval wargame worth booting. - TM

THE LAST INCA

★★+

Free Spirit
PO Box 128
Kutztown, PA 19530
215-683-5609



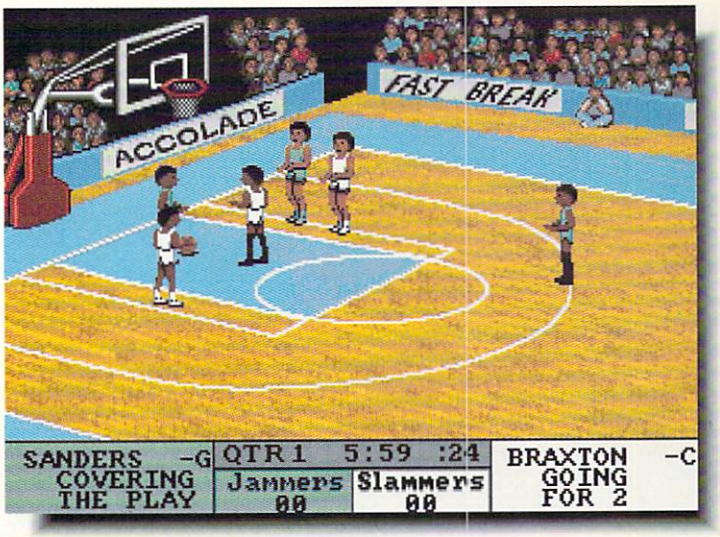
The Last Inca crosses an interesting new setting for an illustrated text adventure with an English teacher's worst nightmare. The new scenery is a great change of pace, dungeons do get musty after a while, though there's still the obligatory evil wizard lurking in the background. *The Last Inca* suffers needlessly from too many grammar boo-boos and too much sloppy spelling -- fatal flaws in a text adventure. The few graphics are an eye pleasing addition; I only wish there were more of them.

- JKC

FAST BREAK

★★★+

Accolade
550 S. Winchester Boulevard
San Jose, CA 95128
408-958-1700



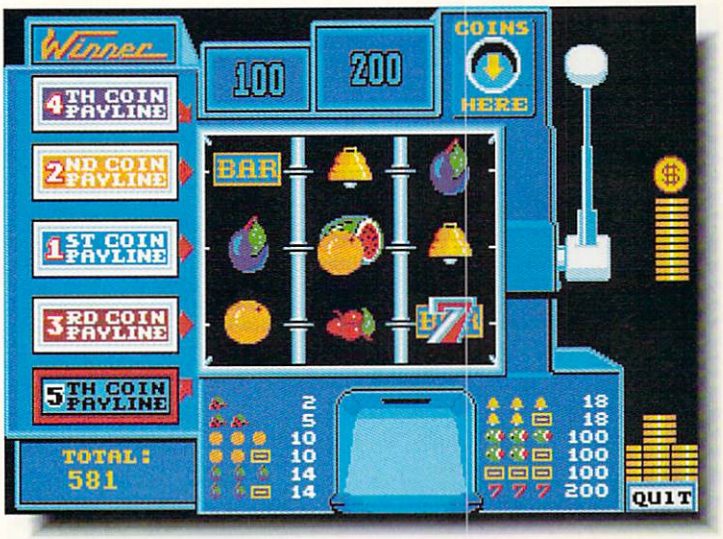
This one- or two-player 3-on-3 basketball simulation comes without free throws, but incorporates just about every other aspect of the game from play-calling to substitutions to fouling out. The animation is smooth, and gameplay is fast and furious whether you use mouse, joystick, or keyboard controls. But I found it sometimes difficult to keep track of my active player, and the menu-based play calling is an intrusion on the otherwise continuous action. Still, this is a typical high-quality Steve Cartwright effort, and basketball fans should find it good for many rollicking hours of squeakball fun.

- MRB

VEGAS GAMBLER

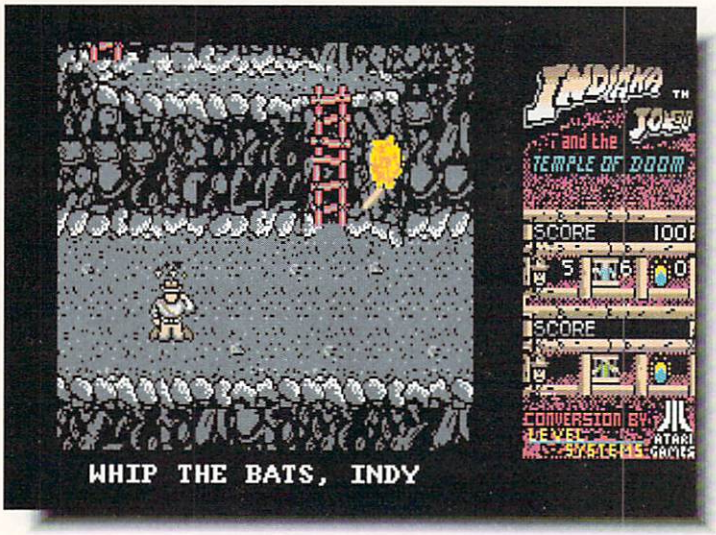
★★★★

California Dreams
780 Montague Expressway, #403
San Jose, CA 95131
408-435-1445



Better than any collection of gambling games I've played, *Vegas Gambler* gives the feeling of the real thing. Moving between roulette, video poker, video blackjack, and a very nice slot machine, you can take your winnings with you. (I won $3100 at roulette and promptly lost it all at blackjack.) The speed of play is very fast, the graphics properly garish (I particularly like the unusual and pretty facecards), and the games full-featured enough that the average casino visitor won't miss anything. Good, solid stuff.

- TM

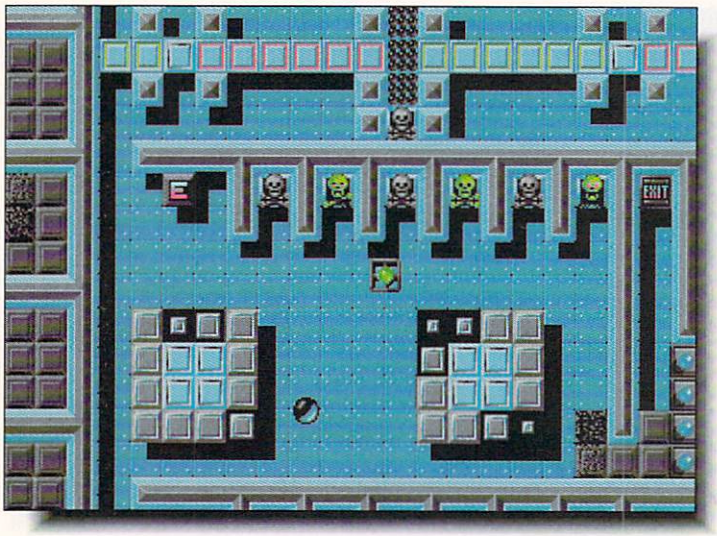


INDIANA JONES & THE TEMPLE OF DOOM

★★★

Mindscape
3444 Dundee Road
Northbrook, IL 60062
312-480-7667

This is yet another example of cashing in on a hot movie title by throwing a substandard game out the door and hoping to sell a few copies before word gets around that the game is about as much fun as watching nails rust. *Indiana Jones* is a dull, average arcade adventure. Its only saving grace is the mildly diverting minecar sequence, though I would have liked it more if the crude graphics had been better Amiga-tized. OK only if you're obsessive about collecting positively everything connected with the movie. - TM



TITAN

★★★★+

Titus
20432 Corisco Street
Chatsworth, CA 91311
818-709-3692

The longer I played this arcade screamer, the more I liked it. The fast-scrolling, large playfields may make you a little queasy if you're prone to motion sickness, but this multidirectional adaptation of *Breakout* is just as addictive as its single-direction predecessors. The first couple of screens are easy enough to let you get the hang of it, but the difficulty level (and necessity for strategy) quickly escalates. Crisp graphics, a good soundtrack, and lightning speed make *Titan* a good choice to spend too many hours with.

- TM

BATTLE SQUADRON

PREVIEW

Innerprise
128 Cockeysville Road
Hunt Valley, MD 21030
301-785-2266

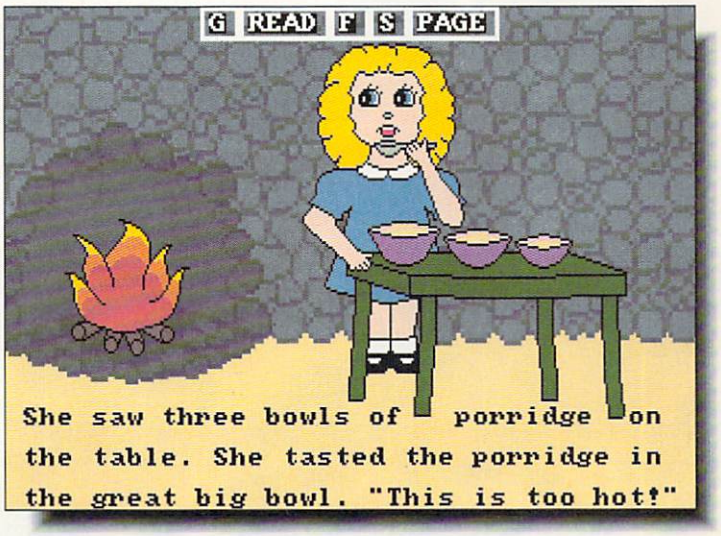
All I've seen of this arcade game is a videotape play session, but it was written by the same people who did Discovery Software's *Hybris*. While the resemblance is strong, the background graphics are much more detailed, with something of the flavor of *Blade Runner*. There is one especially nice scene where there are little vehicles passing through a transparent overpass tube. The game also features a cooperative two-player mode. If the final product is as tasty as the demo, I expect to waste a lot of time with it.

- TM

ROBOT READER: THE THREE BEARS

★★★

Hilton Android
P.O. Box 7437
Huntington Beach, CA 92615
714-963-4584

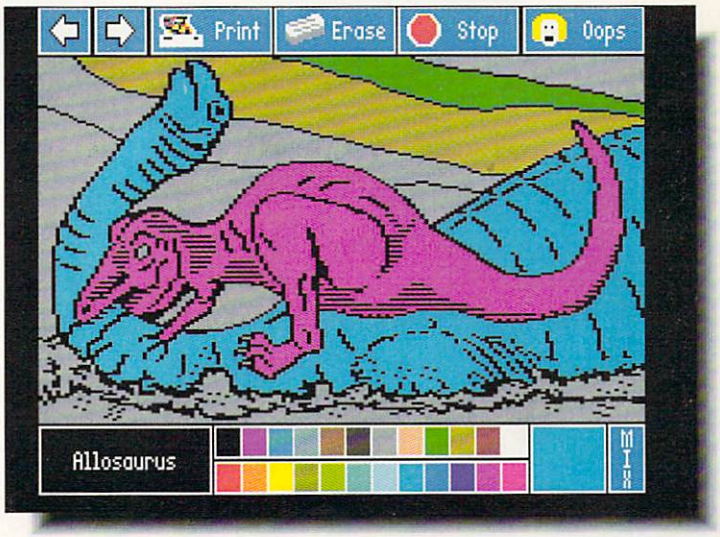


Robot Reader: The Three Bears is an educational game which makes the claim of teaching kids to read by having the computer read a story to them. The graphics are big and colorful, but don't rely on this to teach your kids to read or to be interested in books. The "game" part consists of clicking on requested words within the story. The computerized voice produces pronounciations that are somewhat recognizible as human speech, but they are a poor substitute for the interaction of a story read by mom or dad. - JKC

DINOSAURS ARE FOREVER

★★★+

Polarware
1055 Paramount Parkway, Suite A
Batavia IL 60510
800-323-0884



Dinosaurs Are Forever is another in the Electric Crayon series of computer coloring books. Using a simple paint program-type interface kids can choose from 26 dinosaurs to color and recolor, or print out the designs to color with non-electric crayons. *DAF* will delight young dinosaur fans and start them off with the basics of using a real paint program. Also included is a disk of 'dinosaur' sounds to go with each pic to enhance the dino painting experience. I'd just like to know how they found out what dinosaurs sounded like.

- JKC

UNCLE D'S CON SOUND TRATION

★★★★

Aloha Fonts
PO Box 2661
Fair Oaks, CA 95628
916-631-9633

This is what educational games on the Amiga should be. It's entertaining, colorful, and fun to listen to. Taking the old *Concentration* theme and adapting it to teach kids anything from numbers to animal sounds is a common sense approach that should be used more often. Using masterfully digitized sounds (including the best pig snort I've ever heard!), the child matches what he hears with nicely drawn graphic images. It couldn't be simpler or more fun. - TM

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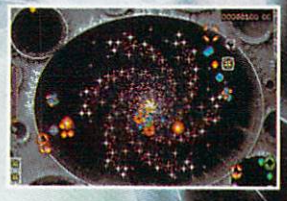

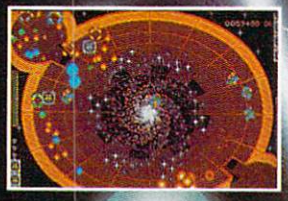

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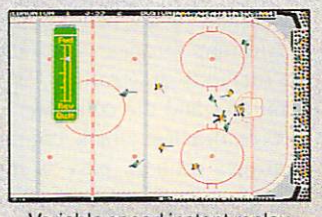
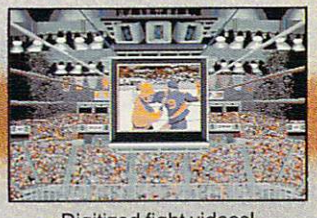


Variable speed instant replay



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Boardgame conversions don't get any better than this. Translating a classic game to computer format is too often spoiled by adding too much or taking too much away from the original. The people at Virgin/Mastertronic have done a perfect balancing act, preserving the feel and play of the original while adding such enhancements as computer opponents and game variations. And having the computer keep track of who has how many armies where eliminates the aggravation of shoving those little blocks around the board, too.

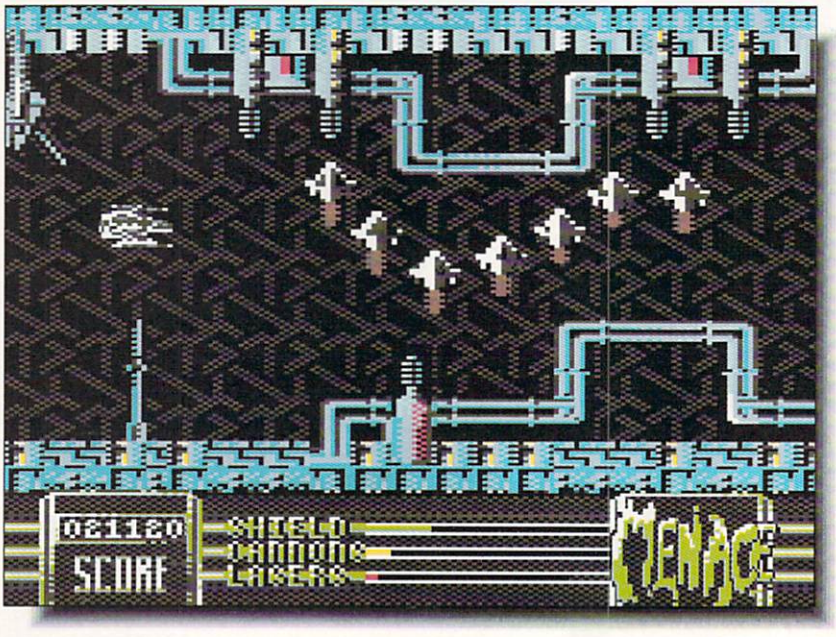
The constraint of not being able to show the entire world map at once is handled very well with two methods of scrolling. With complete joystick control and the computer handling the dice rolls, automated attack continuation, and moving armies around, play is much quicker than with the boardgame, though not so fast that it seems rushed.

I fondly remember marathon *Risk* tournaments from my college days, and I don't have any doubt that there are going to be some late night sessions here in the INFO offices playing this wonderful new version. - Tom Malcom

RISK

★★★★★

Virgin/Mastertronic
18001 Cowan Street
Irvine, CA 92714
714-833-8710



MENACE

★★★★★

Psyclapse/Psygnosis
2150 Executive Drive
Addison, IL 60101
312-620-4444

I have often regretted not giving the Amiga version of this game five stars, so it's with considerable pleasure that I can honestly give them to this incredible translation. I'm beginning to think that Psygnosis doesn't really use programmers at all; it's some sort of magic.

The graphics aren't, of course, Amiga quality, but are nevertheless extremely good. The animation is very fast, and the scrolling seamless. The game itself consists of six levels of the best arcade action I've ever played. Guiding a small ship through the series of alien landscapes, you must destroy wave after wave of baddies, and if you manage to destroy an entire wave, you can pick up extra weapons. You'll need them, because at the end of each level there's a super creature to destroy in order to get to the next level.

Menace is a textbook example of how to write an arcade game. Everything about it, from the soundtrack to the last detail of the background, adds to the experience. This is a game that will stay on your top shelf for a long time to come.

- Tom Malcom

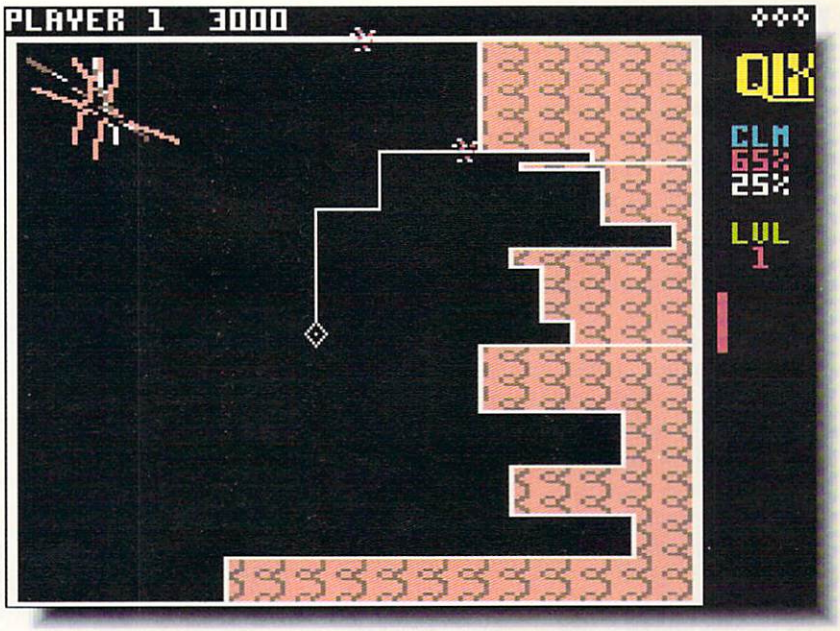
Qix is one of my all-time favorite quarter-eaters, and my name was often on the arcade version's vanity board. Unfortunately, C64 *Qix* is a disappointment. My first objection is philosophical: the box calls it "The 'Computer Virus' Game (TM)." I don't think cashing in on the current virus epidemic is in particularly good taste. The marketroids score another low with this slogan.

I also don't like the garish pattern fills of this adaptation, though I suppose it could be considered an "improvement" over the clean, solid colors of the original.

But the major problem is that this version plays like molasses. I couldn't find an arcade that still had a *Qix* machine on the floor to refresh my memory, but I swear the line drawing, especially in Fast mode, crawls when compared to the arcade original. I own a PD version of the game that plays at twice the speed and feels much more like *Qix* to me.

I really wanted to like this game a lot. But I don't.

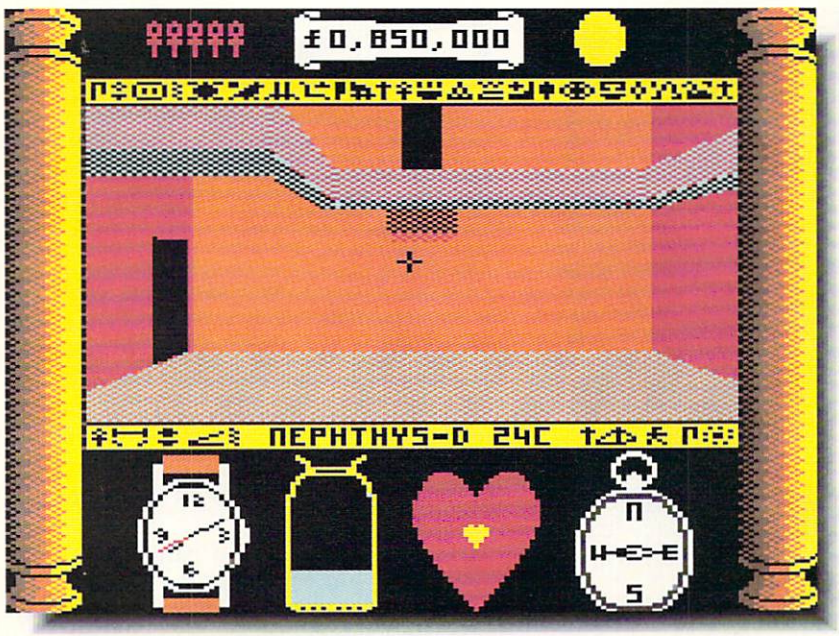
- Mark R. Brown



QIX

★★★

Taito
267 W. Esplanade Plaza
N. Vancouver BC V7M 1A5
Canada, 604-984-3344



TOTAL ECLIPSE

★★★★

Spotlight/Cinemaware
4165 Thousand Oaks Blvd.
Westlake Village, CA 91362
805-495-6515

Set inside an ancient Egyptian pyramid, this graphic adventure is one of the first releases on Cinemaware's new Spotlight Software label. Though the locale is entirely different, the solid-modeled graphics are reminiscent of Epyx' *Space Station Oblivion*.

The plot revolves around finding and destroying the Shrine of Ra in order to forestall a curse that will bring about the end of the world. Movement through the pyramid is joystick-controlled, with keyboard commands for other operations. The biggest problem I have with the game is navigation. While the game always tells me what room I'm in, I find I sometimes have trouble distinguishing walls from floors and ceilings. Some of the objects, too, are difficult to recognize. More exploration, I'm sure, will help my perceptions. And I do intend to continue my explorations. A nice touch is the inclusion of a map with the packaging.

I like *Total Eclipse* very much, particularly the way the 3D graphics draw the player into the game. It's fun, too, to play a game that has a scenario in a location seldom visited by computer games.

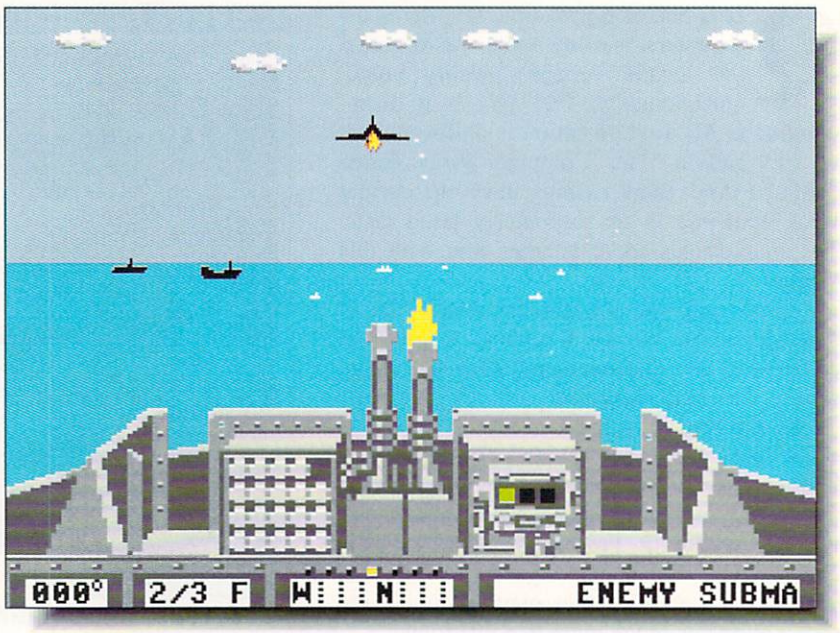
- Tom Malcom

Microprose is known for publishing highly detailed simulation games, and *Destroyer Escort* is no exception. It puts you at the helm of a World War II destroyer protecting a North Atlantic convoy of ships from enemy planes, ships, and submarines. There are six missions to choose from, each with its own perils.

The graphics are well-drawn, but after about five minutes I found myself frantically looking for a way to turn off the incessant sound effects. There doesn't seem to be any way except the volume control on the monitor. The combination joystick and keyboard controls are reasonably intuitive, and a little easier to get the hang of than some simulations I've seen. The battle sequences are as frenzied as you would expect, and I like the option of launching automatic attacks.

The biggest problem I see with *Destroyer Escort* is that there really isn't much to distinguish it from several others of the genre. The level of sophistication is admirable, but I think computer games have pretty much milked World War II dry.

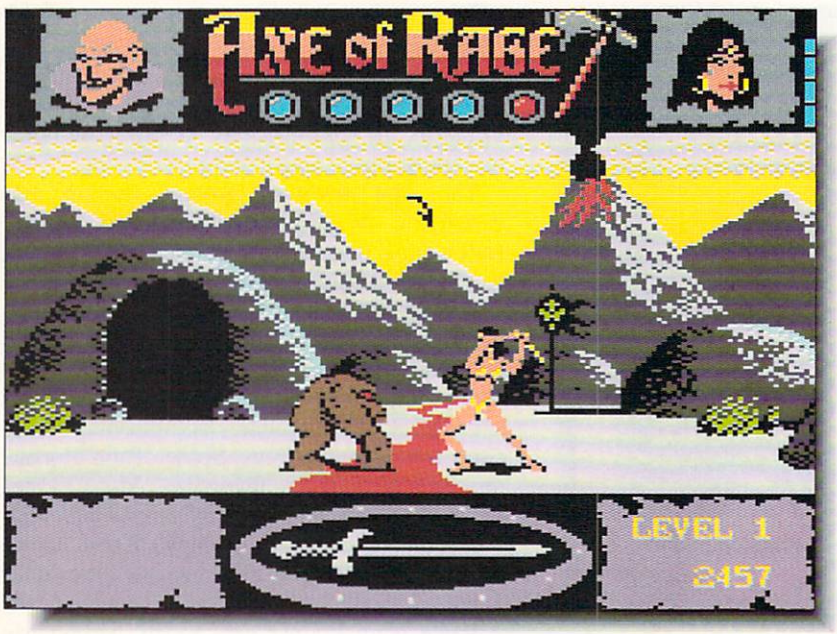
- Tom Malcom



DESTROYER ESCORT

★★★+

Microplay/Microprose
180 Lakefront Drive
Hunt Valley, MD 21030
301-771-1151



AXE OF RAGE

★★★★+

Epyx
600 Galveston Drive
Redwood City, CA 94063
415-366-0606

I like a game that doesn't take itself too seriously, and this one has enough whimsy to make you laugh out loud. It's an arcade adventure set in a prehistoric time filled with such creatures as Knuckle Draggers, Mutant Chickens, and my favorite, Pith-Doff Man. (There's also a Gargantuan Phlegm Launcher, but I don't even want to think about confronting that.)

Though the hack and slash plot is shopworn, the implementation is first-rate and the graphics, animation, and sound effects are great fun. I particularly like the ways your character (and you have the option of being either male or female) is killed off, like windmilling his (or her) arms just before falling into a pit or having his (or her) head bitten off by a large purple creature.

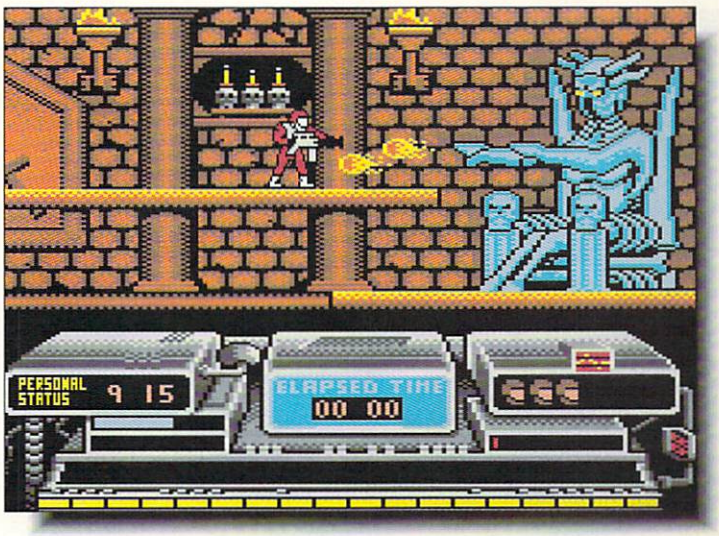
The package includes a paste-on tattoo to wear while you play, and the short manual conveniently includes maps and tips for playing. I still don't like the complex joystick controls games of this kind use, but *Axe of Rage* is so entertaining that I'll put up with it this time. Fun stuff.

- Tom Malcom

BAAL

★★★★+

Psyclapse/Psygnosis
2150 Executive Drive
Addison, IL 60101
312-620-4444

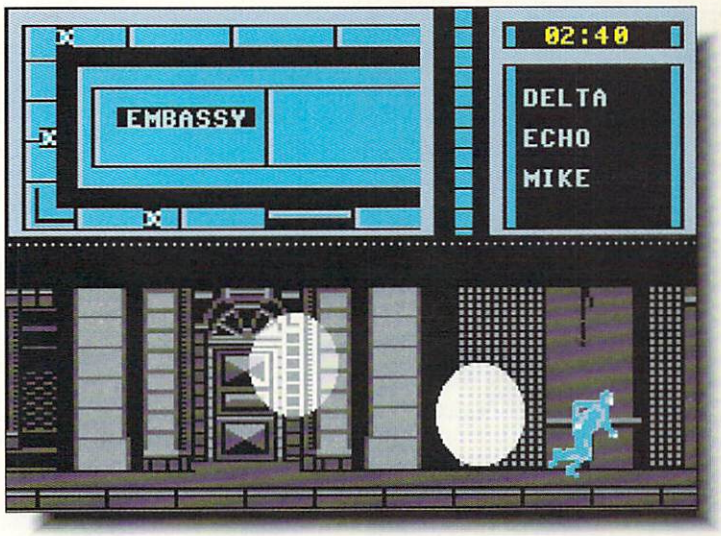


Nobody does arcade adventures better than Psygnosis, and it's nearly impossible to believe that they've been able to translate the already-classic Amiga game to the 64 so faithfully. The graphics, including the animated monsters, are all intact. I did find one bug: occasionally it's possible to fall through a platform at the base of a ladder. Otherwise, the game plays just as well (and just as obsessively) as the 16-bit original. An incredible feat of programming - don't miss it. - TM

HOSTAGE

PREVIEW

Mindscape
3444 Dundee Road
Northbrook, IL 60062
312-480-7667



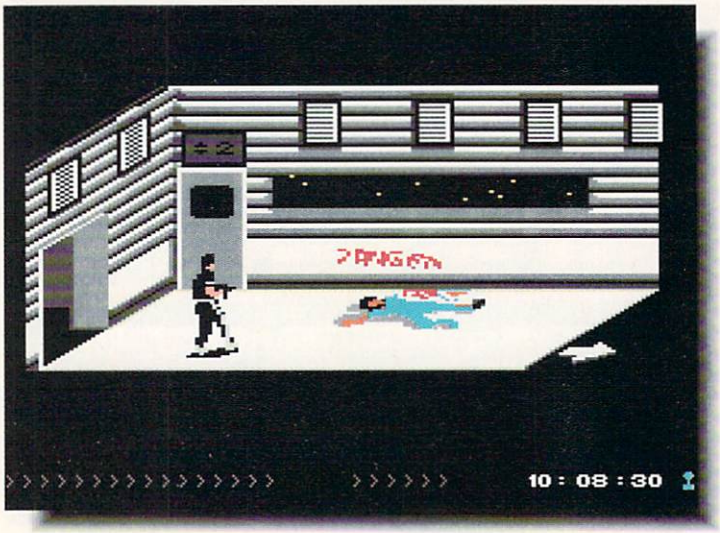
Since Tom discussed the questionable "let's save the hostages" theme of this game at length in his review of the Amiga version in issue #26, I won't dwell on it here. The pre-release copy of C64 *Hostage* we received looks and plays great, with marvelous British-style music, graphics, and sound effects. The quick, responsive gameplay rivals the Amiga version. Dodging spotlights and gunfire was never so much fun. Action fans won't be disappointed in this one -- look for it soon at a Store Near You. - MB

WIZARDRY III: LEGACY OF LLYLGAMYN

★★★+

Sir-Tech
P.O. Box 245
Ogdensburg, NY 13669
315-393-6633

Legacy of LLylgamyn is part three in the classic Wizardry adventure series. A new generation of questers has taken up the adventures of the Knight of Diamonds, which requires converting characters from *Wizardry I* to use in *Legacy*. This game follows the style of the original -- it plays well but looks dated. There are no sound effects and the graphics are minimal. *Legacy* harkens back to the Golden Age of adventuring when battle was by menu and graphics got eaten by trolls. - JKC



PROJECT FIRESTART

★★★+

Dynamix/EA
1820 Gateway Drive
San Mateo, CA 94404
415-571-7171

As graphic adventures go, this two disk space opera plays much better than most. It does suffer from a hackneyed plot (the one with mutant creatures loose on a spaceship that we're all too familiar with), and I could do without the graphic closeups of bloody victims, but the atmosphere the game conjures up is enough to compensate. The game and its graphics are very detailed; I especially like the little touches of animation in some of the ship's computer screens. *Project Firestart* is definitely worth your time.

- TM

KEITH VAN ERON'S PRO SOCCER

★★★★+

Microplay/Microprose
180 Lakefront Drive
Hunt Valley, MD 21030
301-771-1151

Keith Van Eron is probably the best-known pro soccer player in the U.S., and his influence shows in this game's detail. The manual is chock full of helpful tips & tricks for soccer players both on-screen and on the real-world soccer field. The game itself plays very nicely, with fun music, smooth and quick animation, intuitive play, responsive controls, and great graphics. There's even an "instant replay" option! All it needs is rowdy spectators. Soccer fans should eat up this winner from Microprose. - MB

NAVY SEAL

★★★+

Cosmi
415 North Figueroa Street
Wilmington, CA 90744
213-835-9687

Atmosphere is everything in this game. Most of the action takes place underwater or has you trying to get underwater by parachuting out of a plane or jumping out of a helicopter. The underwater graphics are well done and nicely detailed, though I wish the sound effects were better. The main problem I have is that compass directions keep changing arbitrarily. It's intended, I'm sure, to add to the game, but it quickly becomes tiresome to have to check the compass and change direction every couple of seconds. If you have a penchant for underwater derring-do, *Navy Seal* delivers plenty of wetsuit action. - AF

FUTURE GAMES

COMING SOON

Here's our latest list of games recently announced by your favorite game companies. Games that we've actually received are marked with an asterix (''). For even more exciting new game news, check the Show Reports and Game Review sections in this issue.*

AMIGA

Accolade: *Fast Break*, Grand Prix Circuit**
Aloha Fonts: *Uncle D's Con Sound Tration*
Britannica/Logotron: *Archipelagos, Eye of Horus*
California Dreams: *Vegas Gambler*
Cinemaware: *TV Sports Basketball, It Came from the Desert, Death Bringer, The Kristal, Total Eclipse* (Spotlight), *Dark Side* (Spotlight), *Speedball* (Spotlight), *Federation* (Spotlight)
Epyx: *Axe of Rage*, Ishido, California Games II*
Hilton Adroid: *Robot Reader: The Three Bears**
Incognito: *Kingdoms of England**
Infocom: *Arthur**
Interplay: *Dragon Wars*
Interstel: *D.R.A.G.O.N. Force, Witch World, Scavengers*
Lucasfilm: *Loom, Indiana Jones and the Last Crusade*
Microdeal: *Ringside, Slots & Cards*
Microillusions: *The Flintstones, The Jetsons, Jonny Quest, Scooby Doo*
Microprose: *Gunship, Spiderman & Captain America: Dr. Doom's Revenge* (Paragon), *Eliminator* (Hewson), *Exolon* (Hewson), *Netherworld* (Hewson), *Oriental Games* (Microplay), *Savage* (Microplay), *Stunt Car* (Microplay), *3-D Pool* (Microplay), *Xenophobe* (Microplay), *Weird Dreams* (Microplay)
Mindscape: *Star Trek V - The Final Frontier, Afterburner, Gauntlet II, Shinobi, Deja Vu II** (Icom)
Polarware: *Dinosaurs Are Forever**
Psygnosis: *Blood Money*, Beast, Aquaventure*
SSI: *Red Lightning*
Taito: *Operation Wolf*, Bubble Bobble*, Renegade*, Qix*
Titus: *Titan**
TSA Media: *Light Force**

C64

Artworx: *Tank Attack**
Cinemaware: *Total Eclipse** (Spotlight), *Dark Side** (Spotlight), *Deathbringer* (Spotlight)
Electronic Arts: *The Magic Candle** (Miles Computing)
Epyx: *World Karate Championship*, Devon Aire*, Axe of Rage*, Mind-Roll**
Interstel: *Empire*
Lucasfilm: *Indiana Jones & The Last Crusade*
Microillusions: *Fire Power**
Microprose: *Destroyer Escort** (Microplay), *Spiderman & Captain America: Dr. Doom's Revenge* (Paragon), *Eliminator* (Hewson), *Exolon* (Hewson), *Netherworld* (Hewson)
Mindscape: *Shinobi, Afterburner*
Psygnosis: *Menace*, Baal**
Sir-Tech: *Wizardry II: Legacy of Llylgamyn**
Taito: *Sky Shark*, Qix**
Titus: *Titan**

This ad was created in PageStream, with EPS logos and clip art imported, printed at twice this size on an HP LaserJet then reduced by half.

PixelScript™ v1.1

The PostScript interpreter for the Amiga

Print EPS-Encapsulated PostScript-clip art on your Preferences printer.

PixelScript (formerly PrintScript) **v1.1** costs $149US, and requires 1meg RAM; hard disk and 1.5+ meg RAM recommended.

Pixelations™ — *Pixelations, Inc. P.O. Box 547 Northboro, MA 01532 USA 508-393-7866*

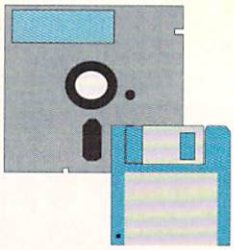
All product names mentioned are the trademarks of their respective companies.

IT'S 11:30 PM, AND THE FATE OF THE GALAXY RESTS IN YOUR HANDS. *YOU NEED AN EDGE...*

You need *RapidFire*™, the automatic firing weapon for your favorite video game. Just plug *RapidFire*™ in between your computer and any joystick, mouse, trackball, or other controller. Then get ready to dominate with up to 10 shots per second of fire power! *RapidFire*™ works with the Commodore Amiga™, 64, 128, and Atari™ computers and video games. $19.95 plus shipping and handling. Order from Ampex Systems, (404)263-9190. Dealers contact DDM Technologies, PO Box 921722, Norcross, GA 30092 Phone 404-879-5607

TECH CORNER

By David W. Martin



COMPUTER DISEASE

★★★★

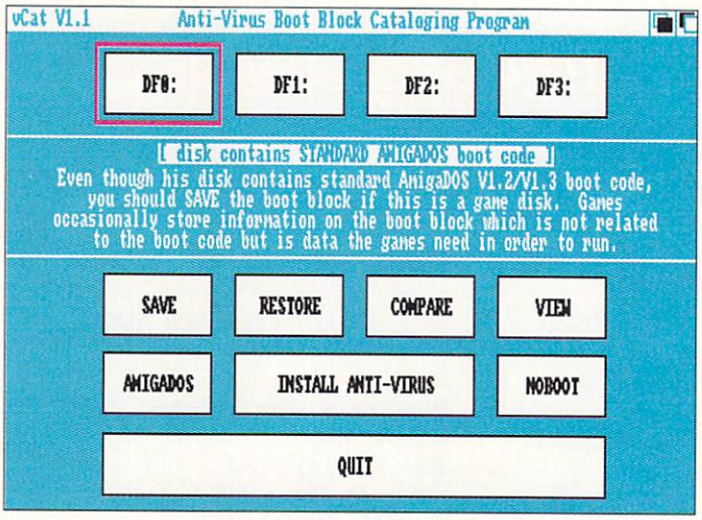
ANTI-VIRUS **$19.95**

DevWare, Inc., P.O. Box 215,
La Jolla, CA 92038, 619-673-0759

★★

V.I.P. **$49.95**

Discovery Software, 163 Conduit St.,
Annapolis MD 21401, 301-268-9877



DevWare's Anti-Virus bootblock cataloging program.

Computer diseases are unwanted programs that can cause annoying or deadly symptoms in your computer system, such as displaying annoying messages or reformatting diskettes. They can infect your computer system, diskettes, or even individual programs. Computer disease takes two general forms on the Amiga: bootblock and program-based (Trojan Horses and worms).

Many public domain programs deal with the problem of controlling bootblock viruses, and are available free of charge from most BBS systems. But there are at least two commercial products that help people control viruses and make computer use a little bit safer.

V.I.P.

V.I.P. (Virus Infection Protection) is a bootblock catalog program designed to create a database that contains bootblock information from your diskettes. It reads and stores boot sectors for viewing, printing, or writing to disk. If a bootblock is ever corrupted by a virus, *V.I.P.* will allow you to write a replacement copy of the bootblock onto the damaged diskette from the *V.I.P.* database. The program includes a help feature for users who hate to read manuals and supports six languages (including English).

V.I.P. does not provide protection from Trojan Horses or worms in its current implementation, and when I contacted Discovery Software they seemed to not even be aware of these forms of computer disease. Since *V.I.P.* only handles bootblock viruses, and because of serious competition from DevWare's *Anti-Virus* and many PD programs, I'd suggest you pass on *V.I.P.*

ANTI-VIRUS

DevWare's *Anti-Virus* protects against both bootblock and worm infections and offers a lot more features than *V.I.P.* (There is, by the way, no known way to defend from a Trojan Horse program except to be aware of them on an individual basis.)

Anti-Virus has a catalog program (*vcat*) similar to *V.I.P.*'s that stores bootblocks in a database so that you can recover damaged boot sectors if the need arises. It even stores the AmigaDOS standard bootblocks, something that I could not get *V.I.P.* to do.

Other *Anti-Virus* utilities include: *vcheck* (similar to *VirusX*), *vinstall* (which installs a visual boot block that, if damaged, shows that something has altered the boot sector), *vreboot* (clears the Amiga's RAM and reboots the machine) and *vtrojan* (checks files for worm infections by comparing a database containing original file sizes with files on the cataloged disk). *Vtrojan* is not meant to be run on boot up, but is used to check disks periodically for viral infection. (This is a classic example of confused terminology, however. DevWare continually refers to a parasitic worm infection as a 'Trojan Horse', a technically incorrect usage that is, unfortunately, becoming more and more common.)

Anti-Virus will be a welcome addition to anyone's software library and comes highly recommended. It is also the only program I have seen, PD or commercial, that offers protection against worm parasites.

EASY DECISION

If PD software has not been the answer to your computer security needs, then check out *Anti-Virus*. It's up-to-date and offers some interesting options for protecting your personal and commercial diskettes.

★

Public Domain

QUANTUMLINK GEMS

3 GEOS UTILITIES

With *Blue Pencil* 1.0 you can analyze your *GeoWrite* files and get a total word and sentence count, words per sentence, words per page, and more. This version doesn't work on large documents, but the author is planning a more extensive version in the future. [Location: CSS/ Geos Arena/ User Applications/ Part 2; By Charles E. Kinney]

Switcher 1.3 allows you to change from GEOS application to application without going through the desktop, which saves you plenty of time and disk space. You only need to have the desktop on your exit disk. There are two versions of *Switcher* for GEOS V1.3 and GEOS V2.0. [Location: CSS/GEOS Arena/ User Application/ Part 2; By Charles E. Kinney]

Printmate allows you to select your printer type from within your favorite application, especially useful for those of us who forget to choose our printer type in the first place! [Location: CSS/Geos Arena/ User applications/ Part 2; By Charles E. Kinney]

TIC TOCK TOE

Okay, kids, imagine for a second that you are playing in the World Cup Finals of Tic Tac Toe. Wouldn't it be more exciting if the players had to move within 10 seconds? That's just what *Tic Tock Toe* does! If your time runs out in this two-player game, your opponent gets to move again. [Location: CSS/ Software Library/ C64 software/ Game World/ Arcade/ Just for Kids; By Bill Bonner]

FLIP-FLOP

Flip-Flop is a marvelous board game. (Let the computer teach you to play the game by pressing return twice at the name prompt!) To win, you need to get four of your color in a row. You can move in any direction and jump any man on the board. To complicate matters, your pieces can change to your opponent's color when moved. You can play your friends or sharpen your skills by competing against the computer. [Location: CSS/ Software Libraries/ Browse C-64 Software/ Game World/ Stuff and Nonsense/ Brain Teasers and Puzzles; By Charles Bayles]

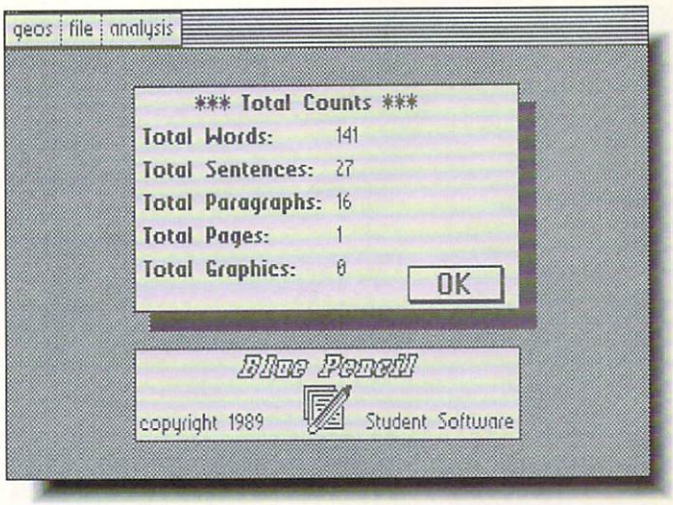
AUTHENTICALC II

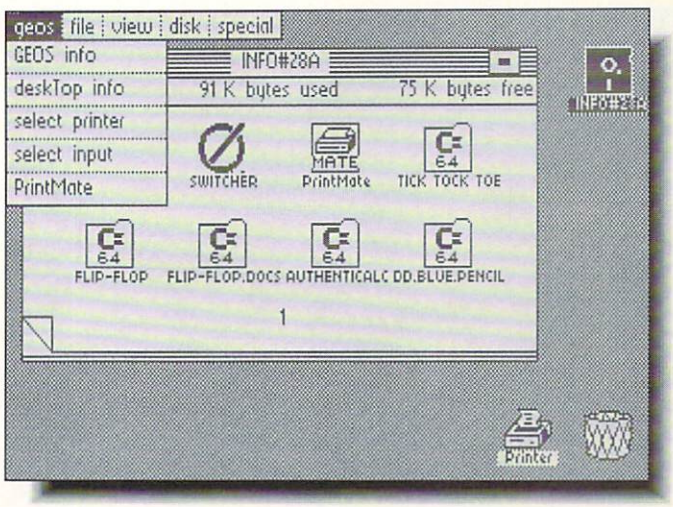
A revised version of a neat program which has the look and feel of a handheld calculator. Great for times when your calculator's batteries are dead or you just left it in the office. For C128 computers in 80 column mode. [Location: CSS/ Browse C-128 Software/ C128 Applications/ Other; By Robert Woodall]

- Saul Cohen

The programs listed here are available on QuantumLink and American PeopleLink, and on other networks, local BBSs, and on public domain disk collections. You don't have to belong to these online services to obtain these programs. But if you're interested, you can get information about signing up for these network services by calling:

QUANTUMLINK:
703-883-0788
AMERICAN PEOPLELINK:
312-648-0660





8-BIT PEOPLELINK

By special arrangement with Commodore, version 4.4 of *RAMDOS* (file #10145, section 4) and *RAMTOOLS* (#10147, section 4) are now available for downloading from PLink's Commodore Club. Other special files from Commodore are *POUND* (#10149) and *GLOBE* (#10155 and #10156), all in the same utility section.

GRAPHICS

GGKINGFISHER (#10028, shown) by T. Preston Chesser captures the beauty of this magnificent bird. *GGCOASTER* (#9965, shown) by JHT is a very realistic drawing of the favorite after-work libation of many of us. Other graphics worth mentioning are *GGELEPHANT GRASS* (#10029), and *GGSCHLOSS CASTLE* (#10014, shown), two very fine graphics by T. Preston Chesser.

A new conversion utility, Steve Emsley's *PIXELPACKER* (#10119) will convert any of 24 different graphics formats to either standard JJ or GG formats.

DOGSPSA.SDA (#10025), *TAROTPSA.SDA* (#9987), and *CATSPSA.SDA* (#10141) are Kathleen Wright's latest Print Shop graphics. If you saw her *FAUNA* files, then you know you will want to have these in your collection.

SID MUSIC

Some of the finest new SID music uploads include BobbyE's *FAROUT.SDA* (#9958), a most ethereal stereo interlude visually expressed by one of DOCJM's excellent graphics; Slip Note's rendition of *BUGLECALLRAG.MUS* (#10075); J.A. Grau's version of *DIVERTIMENTO.PIL* (#10123), with graphics by the composer; *SPRING.SAL* (#10148) from Vivaldi's "The Four Seasons" by David Pike, with a .WDS explanation of the music; *BUFALOSTANCE.SAL*, Neneh Cherry's latest hit SIDed by McFar and CLR; and *L OUT/KELLY* (#10101), a fine rendition by True of a very funny song. And don't miss the upgraded version of Weird Al's *SIDTITLE V7.1* (#10105).

UTILITIES

Section 5 now includes version 7 of *CCGMS* (#9908), a graphics terminal program for the C64. This program works well on local color BBS's, even at 2400 baud. It includes both Punter and Xmodem protocols. It is well worth having if you do a lot of local telecommunications.

C128 owners will be interested in a program called *CALENDAR WARE* (#9992 in section 12), which not only prints monthly calendars to your printer, but also figures out your biorhythm for any given day as well as other useful bits of information. *SIDLIBRARY* (#9998 in section 10) will help you keep track of all your SID files (with their proper extensions) in the 128 mode. And finally, the *C128 GRAPHICS ASSAULT SYSTEM* (#10106) is available in section 10 as well. Used in 40-column mode, you can work with sprites, Koala files, Doodle files, and 8K HiRes files. It is written by Bruce Bowden.

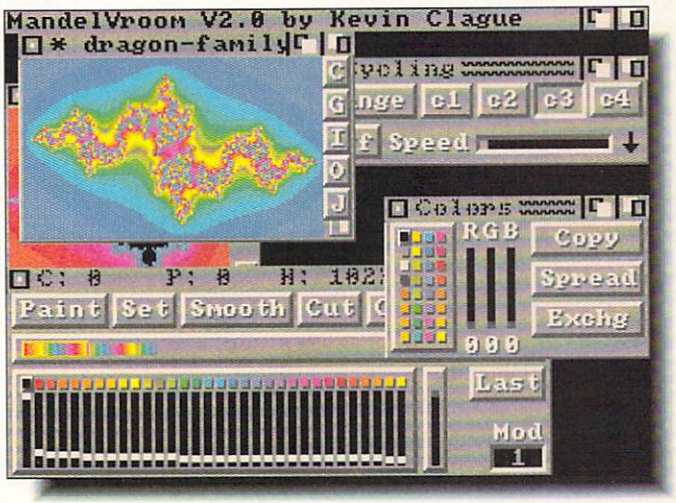
- Bob Umfer [CBM*BOB]

AMIGA PEOPLELINK

Here are some recent AmigaZone arrivals that prove the world of Amiga public domain and shareware software is still as hot as it has ever been, and that there's no lack of talent out there when it comes to writing innovative, spectacular software that doesn't cost a fortune to acquire!

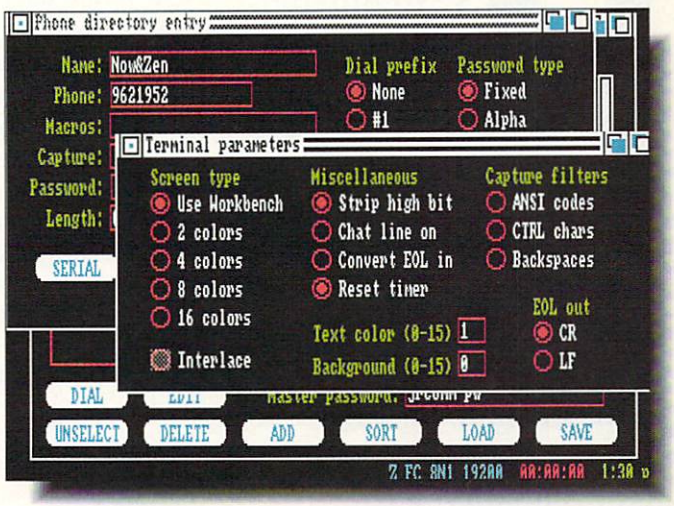
MANDELVROOM2.ZOO [#18,059]

Perhaps the best-ever program to explore the brooding complexity and astonishing beauty of the mathematical formulae known as the "Mandelbrot Set." *MandelVroom* is everything anyone could ask of a piece of software: solid, fast, a gorgeous multitasking interface with shaded gadgets, dozens of example files, and instant HELP for every gadget and menu item. Kevin Clague has pulled off a masterpiece of programming.



JRCOMM94.ZOO [#18,045]

The last "public release" of this great terminal program, before it becomes registered shareware at version 1.00. *JRCOMM* is innovative and stylish, offering just about every feature a modem addict could want. All popular download protocols, ANSI emulation, activity log files, and much more. While different looking than most terminal software, *JRCOMM* is worth supporting, and its author, Jack Radigan, really knows his stuff.

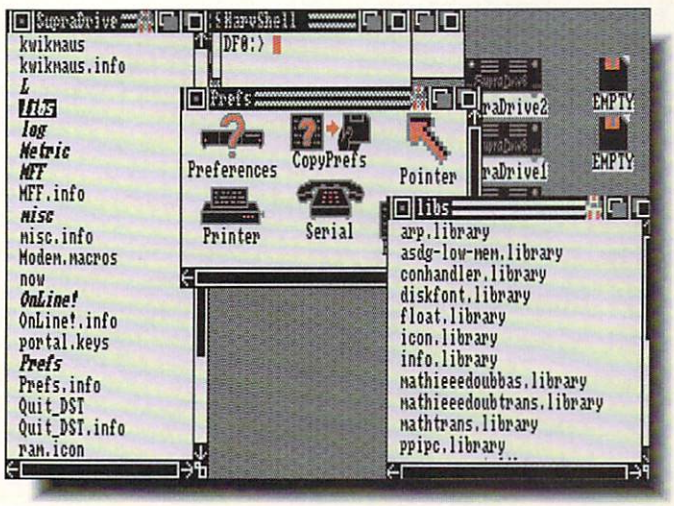


JAZZBENCH.ZOO [#18,012]

While you're waiting for Commodore to release the 1.4 Amiga operating system, here's a public domain "replacement" for WorkBench that incorporates a lot of features and ideas that might show up in 1.4. With *JazzBench* you can view files as icons or text. Display icons for files and drawers that don't have them. Shrink (iconize) windows. Windows "explode" when opened. Lots of other toys to play with here.

GPRINT.ZOO [#17,807]

If you own an Epson FX-compatible 9-pin printer, this file is a "must-have." *GPrint*, invoked from the CLI, delivers highly optimized printouts of 2-color IFF pictures that are simply astounding. No more jaggy, clunky, blocky looking printouts! *GPrint* will give you clean, crisp, precise results with a minimum of hassle. Peter Cherna, *GPrint*'s author, must have impressed the folks at Commodore too. They hired him to work on the print routines for 1.4!



CHARPIC.ZOO [#18,097]

This is a program I've wanted for a long time! It will analyze a medium-res 640X200 two-color (one-bitplane) IFF picture and convert it into a text picture comprised of ASCII characters. The character picture may be saved as either a text file or as a bitmap file. It's great for converting IFF art into text graphics that you can upload to your favorite BBS, and opens the door for whole new artforms, like the text-picture *DPaint III* animation included in this ZOO file by the programmer, Kelly Day. Weird. - Harv Laser [CBM*HARV]

THE VIEW FROM INSIDE

an Interview With Gail Wellington
by Mindy Skelton

At INFO, we believe in the Freedom of the Press. We also believe in the responsibilities of the press. Therefore, the views expressed in this interview are the unexpurgated opinions of the interviewee, and do not necessarily reflect those of INFO Publications.

This issue, we take a rare look inside Commodore with Gail Wellington, Commodore's General Manager, Worldwide Software and Product Support.

Ms. Wellington, who studied Mechanical Engineering at Northeastern University, first became involved with computers as a user, then transferred her expertise as a technical author in the field of mechanical engineering to writing manuals for computers, and eventually began writing application software. During her eight years with Commodore, Ms. Wellington has been in a position to watch transatlantically over the birth and growth of the C64 and the Amiga. We were pleased to be able to ask her to share some of her experiences and insights with us.

INFO: How did you join Commodore?

WELLINGTON: I went to work eight years ago as a technical author for Commodore UK. I moved up to head the software development activities, even before the hardware was shipping for the 64. I went on to manage a support group for our national distributors. I was loaned out to the States for five months to oversee the launch of the Amiga, went back to Europe to launch the Amiga there and then, two and a half years ago, I moved back to the States. Although I am American, that was the first time since I went to work for Commodore that I had been based in the States.

INFO: There are not a lot of women executives in the computer field. Has being a woman in a predominantly masculine area been difficult for you?

WELLINGTON: No. On the contrary, it's been quite easy. The reason that there are not more women in executive positions in any area of science or technology is that women are not encouraged as children to focus on those areas. My mother was shocked when I switched from wanting to be a school teacher to wanting to study mechanical engineering. I remember my little sister (who is now the Vice President of Planning and Development at the Philadelphia Zoo) asking why I didn't do something sensible like get married. Culturally we weren't encouraged to get involved with the sciences. Even today female children are not encouraged to participate in computers, partially because of the types of software that are written and partially because it's just not "in." It's unfortunate.

I feel that, especially in a growth industry like the computer industry has been in the past few years, there were just not enough good people. People didn't stop to think "Is this a man or a woman?" They just wanted to know if the person could get the job done. If you were good, being a woman helped you stand out and worked to your advantage.

When women are looking for a career path, I tell them to look for a fast-growing field. Your talents will be much more appreciated there.

INFO: You've been with Commodore since the early days of the C64. Do you have any interesting stories about Jack Tramiel?

WELLINGTON: I worked for Jack for a long time. People ask me how I felt when he left and my reply is, I felt like a kid whose parents got a divorce -- you

have to be careful of what you say with some of the relatives.

I do remember sitting with Jack in a meeting where we were discussing financial matters and someone said that a particular country was going to have money left over at the end of a quarter. That's not a good thing, because you end up paying more taxes. We were wondering what to do with it, when Jack reached over in the corner, got a brown paper bag and just held it open in front of the man.

I think the computer industry is better off for our friendly rivalry with Atari. No one bets on a one-horse race. If there was only one company, no one would talk about it at cocktail parties or over lunch in the cafeteria, and it's talk like that that sells computers.

INFO: Your title leaves room for a lot of possibilities. What are your actual duties?

WELLINGTON: One of my most visible jobs is developer support worldwide. I have technical people who work for me and handle the actual questions, but my function is to work with developers, integrate them into the Commodore culture, help establish policies that make it easier for them to work with us, and develop software and third-party hardware for Commodore's proprietary technology.

The "Worldwide" is literal. Even though I work out of West Chester, I'm in Europe six or seven months a year. I've demonstrated the Amiga in over fifteen countries, but I haven't added a new one in a while. If anyone has a suggestion (I haven't been to Australia, New Zealand, Austria, or Denmark, for example), I'll be on a plane as soon as they invite me.

INFO: Weren't you even invited to speak in the USSR?

WELLINGTON: Yes, about the time the Amiga was launched in Europe, about three years ago, I spoke to both the Soviet Academy of Science and the Academy of Science and Technology and demonstrated the Amiga. Commodore can sell Amigas in Russia, but because of the COCOM regulations which restrict the export of technology, they must be individual use licenses. This means we have to apply to the United States Government and tell them where every machine is going.

INFO: What part did you have in Commodore's acquisition and development of the Amiga?

WELLINGTON: I first heard about the Amiga in January of 1985, after Commodore had acquired the technology. I was asked by Commodore UK to start thinking about software developers in Europe. In March of 1985 I was asked to come work in the Commodore Amiga facility in Los Gatos as the liaison between the technical people who were finishing the Amiga in California and the sales and marketing people here in West Chester.

I participated in the preparations for the Amiga launch, and was involved in the development of the disk-based demo that explained multi-tasking (Fred the Baker and Rose the Florist).

One of the things I'm most proud of is that I was the producer of the computer-based ballet sequence at the Amiga launch. I worked with Island Graphics who did the actual animation. It was a very moving experience for me when I saw that on stage with the ballerina. I still get tears in my eyes when I look at a video tape.

One of my favorite stories about the Amiga launch concerns my responsibility for the three machines in the orchestra pit which were all equipped with prototype genlocks. Everything was linked together through these three genlocks. There were only five genlocks in the world, and we had them all (two were backups). After the run-through the night before the launch, I stayed until after one working with the technicians to perfectly balance the colors and images on the three big rear-projection screens. The next morning at the final run-through, two of the three genlocks

"Other computers talk about multitasking, but we've been doing it for four years."

didn't work any more. We had to rush in a technician with the other two genlocks, a soldering iron and a scope to get everything up and running again. Once they were working, I sent someone back to my hotel for my clothes. I was not going to let those machines out of my sight before the show.

Still, I had the easy job. I wasn't responsible for Andy Warhol.

INFO: Was there a big launch party in Europe too?

WELLINGTON: Yes. It was held in March of 1986 at the old opera house in Frankfurt, Germany. Again it was a black tie event but we felt we couldn't just repeat the New York show, so we came up with a new production. We were going to use actors who would pretend that they knew about computer, but when it came to the dress rehearsal, they were just awful. Right on the spot we paid them off and brought in our own marketing director and interviewed her. She was fine, but when those several thousand people came in for the launch, we had never run through the entire show from beginning to end.

INFO: Your globe-hopping gives you a unique perspective. Would you say the Amiga is more successful in Europe or America?

WELLINGTON: I'd have to say the Amiga has a larger market share in Europe. About 70% of our sales are outside North America. Part of that is because of the positioning of Commodore

"It's not fair to second guess. Everybody's fallible, and every company is fallible."

in those countries. In the United States Commodore is known principally as a home computer company, and we have had to work to change that. In Europe, Commodore has a more diverse reputation and is a bigger part of the business community. We sold PC compatibles overseas for quite a while before they were available here. Commodore is often among the top three or four PC clone manufacturers in Europe. In Germany for example, the C64, Amiga 500, and Amiga 2000 are three of the top five computers sold.

I think the fact that we have always had a dealer channel in Europe has played a big part in the difference in the perceptions of the company. The machines were not sold as home hobbyist machines, but as the first business micro. There were business software, vertical markets, network software, and scientific applications using the IEEE interface. This software was available six or seven years ago.

INFO: Do you think there's still room in the business market for Commodore to make a significant impact?
WELLINGTON: Absolutely! We have some very specific strengths, not the least of which is that we are a known and dependable word to the more than ten million C64 users. Also the Amiga is a reliable, inexpensive multi-tasking unit. Other computers talk about multitasking, but we've been doing it for four years.

INFO: Is Commodore really planning to stop producing the 64?
WELLINGTON: Let me put it this way: Commodore has a firm policy that as long as people want one of its products in an economic quantity we'll continue to make it. We tried to stop production on the VIC 20 three times and it just kept going. The marketplace said "Don't stop."

Long after the Plus/4 was no longer a visible computer here in the United States, it was still being sold in countries like Mexico and Hungary and other places. Markets vary.

This is a good example of not looking at the global picture. If people say the market for the 64 is declining in the States, they may not be aware of the international picture. In countries like Poland the Commodore 64 is just starting to take off. Political changes in the whole Eastern Block region and loosening of economic restraints there are really opening the region, and the C64 is very popular.

One of Commodore's strengths is that it's not a single-market company. It is taking advantage of its international market.

INFO: There have been problems at the user level with after-sales support, even with Commodore's support network. Does Commodore have any new plans in this area?
WELLINGTON: It's hard. We make some people happy and we disappoint some. It's difficult when you have a product that's as popular as ours. Mr. Copperman, the new president of Commodore USA, is very committed to after-sales support and I think you'll see some pro-active steps in that area in the next few months, including some key high-level appointments to address some of the concerns there. Let me say that Commodore is not unaware. We would like to be doing better, and will be taking steps to improve things.

INFO: A number of people we've interviewed have made suggestions for things Commodore should have done or not done. Would you care to offer any rebuttal?
WELLINGTON: Yes. Monday morning quarterbacks can always win the game. It's hard to respond to that kind of a question. Let me offer an analogy. I can remember when I first was working for Commodore in the UK and seeing decisions that didn't make sense to me. Almost invariably it became clear to me within a few months why a particular decision was made the way it was. Unless you can see the whole picture and understand the entire situation, it's not fair to second guess. Everybody's fallible, and every company is fallible. When people comment or judge without knowing the entire situation, which often we cannot make available to third parties, I think facts get distorted.

INFO: Do you have any thoughts on the future of Commodore?
WELLINGTON: We're investing in ourselves. The black days are behind us. We are building for the future, which we see as twofold. We know we have strengths in the consumer marketplace. We don't intend to walk away from that, but we also have a powerful technology platform which can be sold for professional purposes. What I think our goal is, both short-term and long-term, is to consolidate, keep, and expand our consumer market, and grow another aspect of our professional market on the business side.

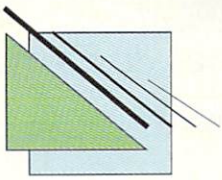
We're feeling very optimistic about the future.

INFO: Is there anything you would like to say, in closing, to INFO readers?
WELLINGTON: Thank you for your support! Users can be our strongest allies. Obviously they care enough not only to buy our products, but to buy INFO to keep in touch with new developments both from Commodore and from all of our good third-party people.

The most important thing I can say is, thank you for buying Commodore and talking about it to your friends.

We do listen; probably more than you think we do. Without you, there's no reason for us to be here.

INFO UPDATE



REAL WORLD

MOVES

National Type Foundry has moved from earthquake-prone Torrance, California to the marginally safer Sacramento. The new address is PO Box 255427 #265, Sacramento, CA 95865. The new phone number is 916-489-1651.

Virgin Mastertronic has relocated at 18001 Cowan St., Suites A & B, Irvine, CA 92714. The new phones are 714-833-8710 voice, 714-833-8717 FAX.

CHANGES

MicroProse has bought **Telecomsoft**, the British company that developed such classic games as *Starglider* and *Carrier Command*, which have been unavailable since the demise of Rainbird Software. The games will be marketed under MicroProse's Medalist International label, and new game releases are planned as well. 180 Lakefront Drive, Hunt Valley, MD 21030. 301-771-1151.

Free Spirit Software has picked up distribution rights for *VizaWrite Classic*, the C128 wordprocessor, and the companion spreadsheet, *VizaStar*. *VizaWrite* sells for $59.95 and *VizaStar* for $69.95. 58 Noble St., Kutztown, PA 19530. 215-683-5609.

Inkwell Systems is bundling its Amiga lightpen with **Glacier Technologies**' *Spritz* paint program. Cost is $159.95. 1050-R Pioneer Way, El Cajon, CA 92020. 619-440-7776.

Zuma Group, developer of fonts and video titling software for the Amiga, has decided to take over marketing of its products from Brown-Wagh. 6733 N. Black Canyon Hwy., Phoenix, AZ 85015. 602-246-4238.

WordPerfect has reduced the price of its monolithic wordprocessor from $329 to $250.

VERSIONS

Seems like there's a new version of **Blue Ribbon Bakery**'s *Who!What!When!Where!* desktop organizer every issue. It is now at 1.3 and you can upgrade for $10.00. 1248 Clairmont Rd., Suite 3D, Atlanta, GA 30030. 404-377-1514.

OOPS

Well, we managed to screw up not one, not two, but three prices in our *Fun with Sound & Music* article last issue. Must've been a really bad week. Anyway, the real prices are: *Perfect Sound* $89.95, *A.M.A.S.* $169.95, and *Audio Master II* $99.95. Thanks to Anthony Wood at Sunrize Systems for setting us straight.

FUN CATALOGS

With the renewed interest in Batman and other comic book characters being generated by the new Michael Keaton *Batman* movie, we thought you might like to know about one of the very best sources of books about comic books. Bud Plant has been stocking the bookshelves of comic book collectors for years with such goodies as compendiums of classic Krazy Kat and Popeye comic strips, graphic novels like Frank Miller's *Dark Night* Batman series, and collections of European and Japanese comics. He even offers trading cards, art portfolios, and posters. The latest 150+ page Summer 1989 catalog will cost you one buck. Bud Plant, PO Box 1689, Grass Valley CA 95945, 916-273-2166.

If, on the other hand, you are into old movies -- really old movies -- we suggest you take a look at the Blackhawk catalog. Their name used to be Blackhawk Films, and their specialty is really old, really rare films on video -- for example, Harold Lloyd comedies, Lillian Gish melodramas, and the classic 1925 Russian film *The Battleship Potemkin*. They also offer low-priced collectors' sets of such things as the films of Cary Grant, episodes of TV's *The Saint*, and the entire *Thin Man* series of films from the 30's. Best of all, their prices are very reasonable. The current 32-page catalog is free for the asking. 5959 Triumph St., Commerce CA 90040, 800-826-2295.

Of course, nobody can get too many books, either, and a good source of closeout titles is Barnes & Noble. They have many stores across the country, but they also ship a zillion catalogs to almost everyone everywhere. Some of the books they offer are weird (like the recent offering, *A Stress Analysis of a Strapless Evening Gown*), but all are great bargains (would you believe the *Columbia History of the World* for only $9.95?) If by some chance you've managed to not get your name on their list, you can write them at 126 Fifth Ave., New York NY 10011.

GOOD BOOK

If you have trouble finding a book that will keep you occupied for more than a few hours at a time, I suggest you run down to your local bookstore and order a copy of *The New Physics* (Cambridge University Press), edited by Paul Davies. This voluminous tome contains everything anybody anywhere knows about the latest developments in physics, from quantum mechanics to cosmology and including everything in between. And don't worry -- by the time you finish this 500-page book (and pay off the $50 it cost you), scientists will have dreamed up even more keen new stuff, and they'll have another book ready.

. . . continued from page 20

★★★★+

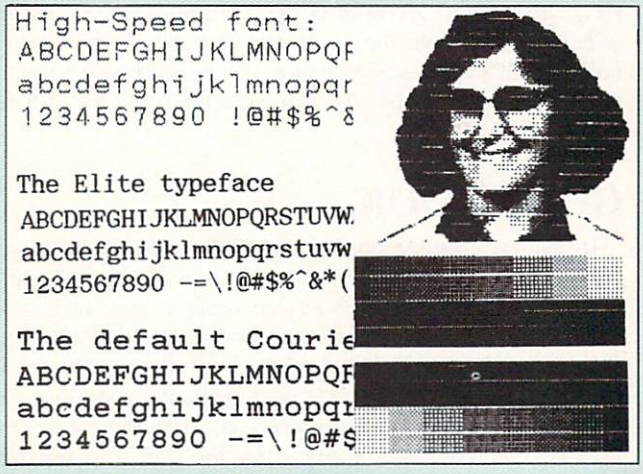
TOSHIBA 321SLC — $899.00

Toshiba
9740 Irvine Boulevard
Irvine, CA 92718
800-457-7777

It's a tearful day here in editroidland. The 321SLC 24-pin color printer I've had as a loaner from the nice people at Toshiba finally has go back from whence it came. (Actually, it's going back because I've had it so long I'm only weeks away from having a common-law relationship with it.) It has performed so faultlessly and so reliably that I had been taking it for granted. Its output is clean, crisp, colorful, and versatile enough to suit just about any purpose.

The 321SLC has a wealth of built-in options, all displayed and user-configurable on a small LCD window on the front-mounted, easily accessible control panel. Conveniently, it will retain whatever default configuration it's programmed with for as long as it's plugged in.

Versatility in text printing is the 321SLC's strongest point. It can accept two credit card sized font cartridges at once, automatically recognizing them and adding their contents to the three built-in typefaces showing on the menu. Fonts can be selected via the front panel menu, or through software. I have found, though, that some software has a tendency to reset the printer, negating whatever font has previously been selected. There are so many options that changing fonts, pitches, color, and the like can be a little confusing to figure out at first, but some time spent with the manual and setting up macros in your wordprocessor will give you unparalleled variety in your final output. Touches of color for emphasis are more effective than any underlining or bolding can hope to be. It supports graphics resolutions up to 360 x 360 dpi, and while it's not the fastest printer on the market, it's not the slowest either, with letter quality (and that really is letter quality, not just near it) printing at 72 cps and draft at 216. There is a Preferences driver for it, and it's also directly supported by *WordPerfect*. In addition to the font cartridges, there are also emulation cards available if you need to make the printer behave like an Epson or other such.



Sample output from Toshiba's 3215LC

I have only a couple of small complaints with the machine. While there are sound baffles on the cover, the 321SLC is still the loudest printer in the INFO offices. Though it has excellent paper handling ability, I do wish it had a bottom feed. Finding ribbon cartridges can be a little difficult, though a good office supply can usually order them. Color ribbons are more expensive, but luckily the printer will also accept plain black ribbons for everyday printing.

Overall, the 321SLC is the best dot matrix printer I've had the pleasure to use. While the color output is not up to HP Paintjet quality, it is nevertheless very good, and text quality is exceptional in any font you choose. It has done everything I've asked without giving me a lot of grief in the process. I'm going to miss it. A lot. - Tom Malcom

AGE OF DISSENT

Easily the best company name of the bi-month, we ran across *dissidents* while researching last issue's *Fun with Sound* feature. The company markets two rather specialized sound-oriented products: **MIDI Sample Wrench** and **SpeakerSim**. The Sample Wrench is a richly featured multitasking MIDI sound editor which supports MMA Standard Sample Dump samplers, and that support is accomplished by using libraries so that when new samplers come into existence, all that's needed to support them are new libraries. A sensible approach. It does things I've never even heard of, like automatic zero crossing detection, DC offset compensation, and 3-way adjustable parametric section. In other words, it looks like a strong contender for the Ultimate Sound Editor. *SpeakerSim 1.1* is a CAD tool specifically written for loudspeaker design. Its list of features, too, goes on and on. The package includes a multitude of graphing options, along with data files for many popular existing speakers. Cost for *SpeakerSim* is $112, and $279 for *MIDI Wrench*. 730 Dawes Ave., Utica, NY 13502. 315-797-0343.

3D IN MIND

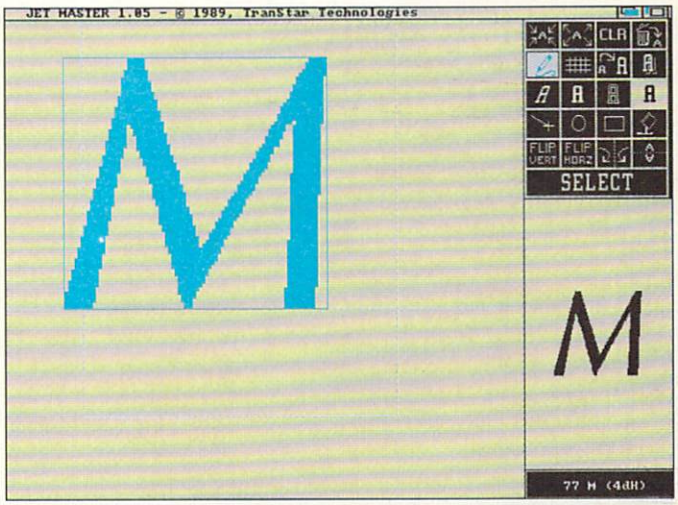
PAGErender 3D is the latest in *Mindware*'s line of 3D and animation products, and a quick look shows it to be their most feature-laden product yet. The list of features is a long one, including such conveniences as a choice of four coordinate systems (Cartesian, spherical, cylindrical, or tetrahedral), and four drawing modes (solid, solid outline, hidden line removal, and the inevitable wireframe). The size of the image is limited only by available memory and the display is scrollable, with the option of saving any part of it as a separate IFF frame. The package also provides automatic scripting, and through the included *PageScript I* output generator, will produce encapsulated script files that can be printed on a PostScript laser printer. It's compatible with Mindware's *PAGEflipper Plus F/X* and retails for $159.95. 110 Dunlop St. W., Box 22158, Barrie, ON Canada L4M 5R3. 705-737-5998.

ULTRA HYPER

Intuitive Technologies' *UltraCard* is an innovative hypermedia product similar to Apple's *HyperCard*. The concept is that you create frames and combine these frames in a stack; each frame consists of objects which can contain data and/or trigger action when you click on them. You supply the action information for an object by writing a script in the built-in language called UltraTalk. If you'd like to try it out, there's a freely-distributable demo version called *UltraCard BROWSER* that's being made available on many of the online services. The full implementation is $50 (+ $5 shipping) from: 2700 Garden Road - Suite 6, Monterey, CA 93940. 408-646-9147

CLUE ME IN

SSI sent us two clue books for their AD&D series of roleplaying games. One is for *Heroes of the Lance* and the other for *Hillsfar*. We only wish we'd had them before we did the reviews. $7.95 each. 675 Almanor Ave., Sunnyvale, CA 94086. 408-737-6800.



The Jet Master font editor from C. Ltd.

FONT DESIGNER

We just received a copy of *C Ltd.'s* new font editing package, **Jet Master** ($79.95). It looks very complete, and while it will work nicely as a stand-alone font editor, the package is aimed specifically at owners of HP Laserjet printers. The software will allow you to convert Amiga fonts to HP Laserjet Soft Font format (or vice versa) so they can be downloaded to the printer. A disk of fonts is also included to provide a jumping off place for designing your own. 723 East Skinner, Wichita, KS 67211. 316-267-3807.

DE HELP FOR DPAINT

We knew it was just a matter of time before *RGB Computer & Video Creations* came out with **DeluxeHelp for Deluxe Paint III** ($49.95). It's the latest in their ongoing series of interactive tutorials for popular software titles. This one is a two-disk set, with one disk covering painting techniques and the second delving into animation. Also new from RGB is **DeluxeHelp's Advanced Techniques - Textures & Backgrounds for Deluxe Paint II**, which shows how to create organic backgrounds and textures (such as marble, wood, gold, and the like) tailored for presentation graphics. Price is $34.95. You'll have to supply your own copy of *DPaint* for both titles. 3944 Florida Blvd., Suite 102, Palm Beach Gardens, FL 33410. 407-622-0138.

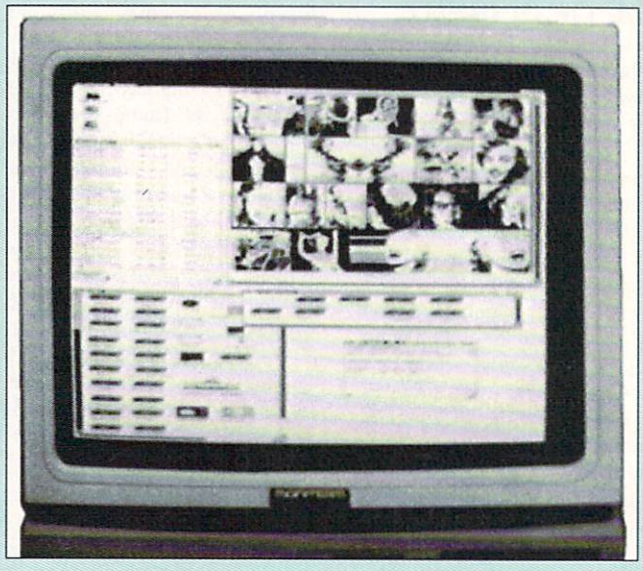
INSECT SPRAY

Users of *Benchmark Modula-2* will be glad to learn that *Avant-Garde Software* is shipping a **Source Level Debugger** to use with their programming language. The package uses ten different types of windows to show you how your program is doing: source, disassembly, register status, break point list, symbolic data, to name a few. The debugger is completely mouse-driven. Price is $149.95. 2213 Woodburn, Plano, TX 75075. 214-964-0260.

★★★★

VIKING I — $1995.00

Moniterm
5740 Green Circle Drive
Minnetonka, MN 55343-9074, USA
(612) 935-4151



The Viking I is a 19-inch high-resolution monitor for the Amiga 2000. Built by Moniterm for high-end users of desktop publishing and business applications, it uses a paperwhite Pa94 phosphor to provide flicker-free viewing in 320x200, 640x400, and a new enhanced high-resolution 1008x800 mode.

In this office, where playing games is legitimate work and joysticks are standard equipment, a large monochrome monitor symbolizes the dreaded corporate company policy-maker bureaucratic papershuffler. So, naturally it came to reside in the production office, where, from what the others can gather, I believe *Professional Page* to be a derivation of *Pong*. They collaborated on the story that it would make working on page layout less tedious.

I inventoried the box and found there was a board to install and software with specialized tools for the monitor, resetting the WorkBench, and a new Preferences program. Later I found I needed Commodore's Enhanced Chipset if I was to achieve the enhanced mode. For all intents and purposes, at that moment I became this issue's *Bryce* strip. There were cables and connectors strewn about my office like crepe paper at a high school pep rally, "Pull 'em out! Put 'em in! YEA CHIPS!" I have a simple suggestion for all -- have someone else set it up. The board was easy, the cables "stupid proof," and the chips will be standard with WorkBench 1.4, but I agonized over a startup-sequence that would not initially recognize my Bernoulli drive.

Once installed, the A2024 JumpStart script loads updated libraries, saves the necessary information to RAM, and then reboots the system, (which may set off a false alarm from virus checkers), but does not survive a cold boot.

The monitor will let you run any program in the standard modes, though the lack of color shows it was never meant to do paint, animation, or game programs. Viking I is at its best with text, spreadsheet, and CAD/CAM types of programs where color is of little consequence. In enhanced mode, the monitor has almost twice the amount of information as 640x400 on screen. Twice the text means you may not have to scroll through your spreadsheet or set up two separate data entry fields. If you work daily with the aforementioned kinds of software, this will be a welcome product for your flicker-tired eyes and scroll-weary fingers.

For the most part, what I run is *Professional Page* and *Transcript* with quick jaunts into paint programs. Since the Viking I connects via its video card, I just left my Commodore 1081 monitor hooked up and off to the side. I ran everything in standard high resolution. This gave me a huge screen with no annoying flicker, and a smaller color reference screen. (I used to ingest caffeine until my jitter rate equalled the 1081's interlace flicker.)

The problems I ran into were software-related, like customizing the startup-sequence, packages that would not work in enhanced mode, and some graphics programs with preset zooms that no longer magnify as large as you need. These will no doubt change over time as software companies realize the new needs of their customers.

We are glad to see this type of product for the Amiga from Moniterm, a company that is already established in the IBM and Macintosh markets. They strategically entered our market just ahead of the release of *XWindows* and an Amiga-based Unix system. They also beat out Commodore's hi-res monochrome monitor. This will, no doubt, give them an edge in the Amiga high-end, high-res monitor race. I know we will be seeing lots of Moniterm and Amiga logos side by side in the future.

- Megan Ward

★★★★

A-MAX

$199.95

ReadySoft
30 Wertheim Ct., Unit 2
Richmond Hill, ONT L4B 1B9 Canada
416-731-4175

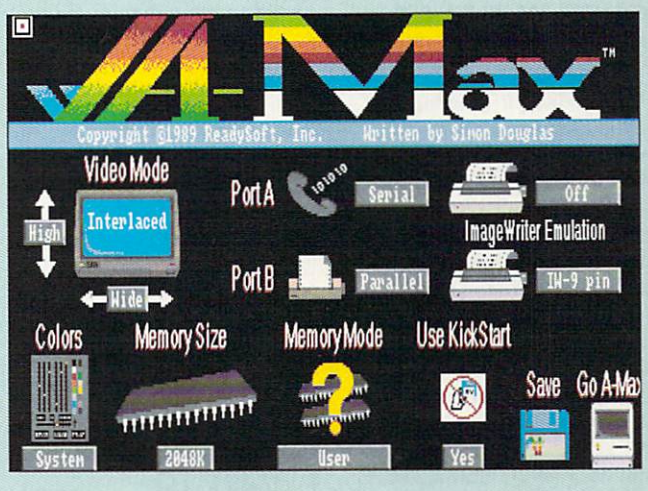
ReadySoft's A-Max Macintosh emulator turns any Amiga into a Macintosh clone. Though this is not a multitasking system, the good news is that even a plain vanilla Amiga running A-Max will often out-perform a standard Mac, and a 68020-equipped machine will run rings around it.

The emulator hardware is just a plastic box to house a set of Macintosh ROMs, which you'll have to supply yourself (about $200). Old 64K Mac ROMs will work, but I strongly suggest you invest in 128K ROMs. The cartridge plugs into the Amiga's drive port and sticks out six inches behind it. It can, however, be hung off the back of an external drive.

The A-Max software gives you a great deal of control over its setup and operation, as you can see from the setup screen shown here. You can adjust how much RAM the Mac will use (any left over can be used as a recoverable Mac RAMdisk), parallel or serial printer configuration, screen colors, etc. You can even opt for your Epson-compatible printer to emulate an Apple Imagewriter. A-Max can run in any of a number of screen configurations, including standard Mac screen size. I found the most useful to be 640x400 interlace mode. It will also work with a *flickerFixer* or *Viking I* monitor.

I advise that you invest in a native Mac drive if you are planning on doing any serious work. A-Max uses its own custom disk format in your Amiga drives, but you'll still need to read Mac programs and Mac data disks. Though you can transfer disks to A-Max format using a Mac and a transfer program, it's a labor-intensive process you won't want to go through often.

Most of the software I booted ran fine, from desktop publishing packages to the *Excel* spreadsheet to *Microsoft Word*. There are a couple of things that A-Max will not do. It will not access your hard drive, though ReadySoft is working on compatible drivers for various hard drive controllers. Also, it will not do Mac sound, so you won't get much mileage out of music and speech programs. (It will do the system "beep," though.)



There's a program for transferring data between Mac and Amiga formats. One of the first things I wanted to do when I fired up the A-Max was to transfer a bunch of Mac clip art files to Amiga IFF format. Unfortunately, I hit some problems. Problem #1: The transfer program only works on TEXT files. I had to change the filetype of the clip art files I wanted to transfer from PNTG (painting) to TEXT using the public domain Macintosh file editor *FEdit*. I could then transfer the file using the FTF program (after first clicking the Carriage Return/Line Feed gadget off). Problem #2: Assuming that you're just transferring a text file, FTF strips off the Macpaint file header that the Amiga PD *Macview* program looks for. So I had to add a header back to my transferred files. I took the *WHouse* sample Macpaint file that is included with *Macview* and *CHOP*ped it to 128 bytes, then used the AmigaDOS JOIN command to link it to the front of my translated Macpaint files. *Macview* was then able to convert the file to IFF. Simon Douglas, the author of the A-Max system, says he's working on New Improved file transfer software that will alleviate these headaches.

Though I had philosophical problems with converting my Amiga into a Mac (I felt like Dr. Frankenstein), A-Max performed well above my expectations. A-Max is an exciting, landmark product for the Amiga. If you want both a Mac and an Amiga, A-Max should make your decision much easier. - Mark R. Brown

For more information on A-Max, check out this issue's feature titled *Building a Super Amiga*.

New Products & Reviews

MOUSE IN A-FLAT

The most esoteric software we've received in quite a while is **MIDI-Mice**, a program that lets you use any MIDI device to control any Amiga program. It claims to multitask with any commercial software, even games, and to be able to share MIDI events with no conflict. It holds up to four MIDI to mouse/keyboard event maps in memory at once, and the maps can be edited on the fly. Can you imagine playing *Ballistix* with your MIDI guitar? $85.00 from *Tensor Productions*, 280 Mathilda, #9, Goleta, CA 93117. 805-685-6245.

PAINT BOOK

Steve Anzovin, who is a frequent contributor to Compute!, has released the second edition of his **Using Deluxe Paint**. The book covers versions of Deluxe Paint for the Amiga, Apple IIGS, and IBM. A chapter at the end of the book discusses *DPaint III*. $23.95 from *Compute! Books*, PO Box 5406, Greensboro, NC 27403. 919-275-9809.

STARTING OUT

Micro Systems Software has bundled together integrated versions of their productivity titles into **The Works! Platinum Edition**. The all-in-one package includes a wordprocessor (Scribble!), spreadsheet (Analyze!), telecommunications module (Online!), along with a database engine and sideways printing utility. The three disk set costs $295.00. The Platinum Editions of *Scribble!* and *Online!* are also available separately. 12798 W. Forest Hill Blvd., Suite 202, West Palm Beach, FL 33414. 407-790-0770.

MATH WARE

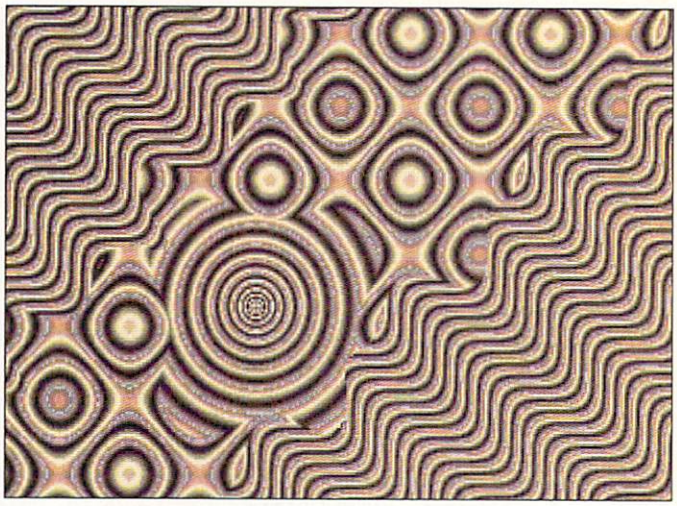
Fans of *Doug's Math Aquarium*, which includes the INFO staff, will be happy to know that *Seven Seas Software* has released a **Library Disk** costing a mere $13 to go along with the fascinating mathematical art program. It includes a new collection of images along with the formulas needed to generate them. *Doug's Math Aquarium* is, of course, required. 35 Cape George Wye, Port Townsend, WA 98368. 206-385-1956.

I WANT TO THANK...

Baudville is shipping the latest accessory disk for their *Award Maker Plus* certificate printing package. The **Education Award Library** includes four new fonts and ten new borders. Cost is $29.95 and *Award Maker Plus* is required. 5380 52nd St. SE, Grand Rapids, MI 49508. 616-698-0888.

BOOKSHELF STUFFERS

The flood of new book titles from *Abacus* continues with **Amiga C for Advanced Programmers**, the twelfth volume in their *Amiga Reference Library* series. Cover price is $34.95. While we haven't seen a copy yet, **Amiga Graphics - Inside & Out** claims to give comprehensive coverage of the topic. $34.95. **Amiga Virus Protection Toolbox** is a book and disk combination which will provide both the information and software you need to prevent your Amiga from becoming infected. Remember, always practice Safe DOS. $59.95. 5370 52nd St. SE, Grand Rapids, MI 49508. 616-698-0330.



Math magic from the latest Doug's Math Aquarium Library Disk.

AMIGA HARDWARE

MULTIPLES

Multiple serial ports seem to be the In Thing lately. *Checkpoint Technologies* has just released the **Serial Solution**, a Zorro II card which provides two additional serial ports for the A2000. One port is standard Amiga 25-pin, while the other is 9-pin AT style. Up to five of the boards are supported by the included set of drivers. Cost per board is $299. PO Box 2035, Manassas, VA 22110. 703-330-5353.

POWERING UP

Micro R & D sent along one of their gold-painted replacement power supplies for the A500, called the **MW-738D**. Carol promptly appropriated it and hooked it up to her machine, where it's been working along just fine. $109. 3107 W. Hampden Ave., Sheridan, CO 80110. 303-789-0424.

HARD DRIVING

A2000 owners can use PC-style ST-506 hard drives thanks to *Spirit Technology's* **HDA-506-2** adaptor card. The thing plugs into any Zorro slot and then connects to a 3.5" or 5.25" drive. A steel rail is also available to turn it into a hard card. (In that case, if you're not using a Bridgeboard, you can plug it into the last slot on the left and let the drive hang over the two unused PC slots.) $259.00. 220 West 2950 South, Salt Lake City, UT 841155. 801-485-4233.

COLOR ROBOT

Providing you have NewTek's *Digi-View* and a black and white video camera, **Auto Droid** will let you do hands-free color digitizing. It's a little motorized color filter wheel that operates through the Digitize Auto menu item within Digi-View. $59.95 from *MicroSearch*, 9896 Southwest Freeway, Houston, TX 77074. 713-988-2818.

BUILDING A SUPER AMIGA

by Mark R. Brown, Technical Editor

Nobody seems to be making a big deal over this, so I guess it's up to us to point it out: Commodore is the only company building a personal computer that can be configured to run IBM/PC, Macintosh, and Amiga software all in one box. Once the software gets through beta testing, it will also be able to run Unix. (There are even emulators that will let it run C64 and CP/M software, sort of, but why muddy the issue?) This makes the Amiga the most powerful -- and, more importantly, the most useful -- personal computer you can buy.

Of course, it takes a bit of extra gear to be able to do all this. Though the odds are good that very few people will undertake to build an Amiga system that can do absolutely everything, we thought it might be fun to see what it would take (and how much it would cost) to put such a system together.

IT'S GENERIC

We're not going to put together a system for any particular application here. We're just building a generic "Super Amiga." We won't even be plugging in a printer. When you talk applications, you'll still have to add in the cost of whatever additional software and hardware you'll need for what you have in mind.

Then, too, we're working off a "wish list." We haven't actually put together a Super Amiga system, so there may be some hidden caveats or incompatibilities that would be of prime importance if we were actually assembling a "real world" system. When there is more than one choice for a component, we'll describe something generic with features and pricing close to what's really available. This is a "mind experiment" if you will, not an Official INFO Recommended System. That said, let's get to it.

THE BASICS

First of all, we've got to start with an Amiga 2000 ($1995 list). Though you can do some marvelous work-arounds and expand an A500 (or an A1000) to incredible limits if you are creative enough, we already know we want to expand, and might just as well start with the box that has the slots and the big power supply we'll need.

"Why not the A2500?" you may ask. Well for one thing, the A2500 comes with Commodore's A2090A hard disk controller, which is, to put it bluntly, not the most appealing hard drive controller on the market. We'll add one with a little more pizazz later. And the A2500's 40 megabyte hard drive is just a bit wimpy for the number of applications we're planning to run. Also, the 68020 board in the A2500 may not be the co-processor board we want. More on these topics later.

MASS STORAGE

We want a lot of fast storage for this system, and after much soul-searching and deliberation, we decide to go with a fast 100 meg SCSI hard card with an 11ms Quantum drive; cost, about $1600. We're picking a hardcard design because it leaves the Amiga's 5.25" drive slot free to take the floppy drive for the Bridgeboard we'll add later. I'd really rather go with a removable media device like a Syquest removable platter hard drive or a Bernoulli box, but I'm just afraid that their 20-44 meg capacities wouldn't be up to the demands of Unix. Maybe we can add one later.

While we're at it, we want to install a second internal 3.5" floppy drive. Commodore's is $199, but we can probably save $40 or so if we shop around for a third party drive. Because you can never have too many drives, we'll also add a low-profile third party external 3.5" floppy drive for about another $150. (We'd only buy Commodore's huge and clunky A1010 external drive under threat of death.)

ACCELERATION

Of course, we won't be satisfied with just a stock 68000 cpu in our Super Amiga. We want more speed! And AMIX, Commodore's Unix clone, will require a 68020 or 68030 co-processor board with an on-board MMU (Memory Management Unit). Commodore's own

A2620 68020-based board looks nice, and it costs only $1999 with 68881 math co-processor and 2 megs of 32-bit RAM, but we'd really like to have a 68030 in our full-blown system. Commodore's new 68030 card, the A2630, will hold 4 megs on-board, and it has an external buss connector for additional 32-bit RAM, but there's no price or availability date yet. There are several third party 68030 cards available now, and we can pick up a 25 MHz unit with 68882 math co-processor (but no RAM) for about $1500.

UNIX

We'll need Commodore's Unix operating system, AMIX, so we'll assume that it's a year or so down the road and Commodore is actually shipping it. (It's already shipping in Europe.) Here we run into a major snag: Commodore says they are only planning on shipping AMIX installed on the 100 meg hard drive in the bundled A2500UX Unix system. The A2500UX will come with CBM's own 68030 card, a 150 meg streaming tape backup unit, and their new improved A2091 hard drive controller. That's all fine, and it comes close enough to the system we're trying to put together that we could probably just start with it and build from there. But we don't know what it will cost, or how long we'll have to wait for it to come to market. So we're just going to continue mentally assembling our own system, and assume that Commodore will eventually make AMIX available by itself, or that some wise third party will introduce an Amiga Unix. If they do, what it will cost is anyone's guess. So we'll pick a figure close to what Unix costs for other computer systems: $1000. After all, this is just a "mind experiment," right?

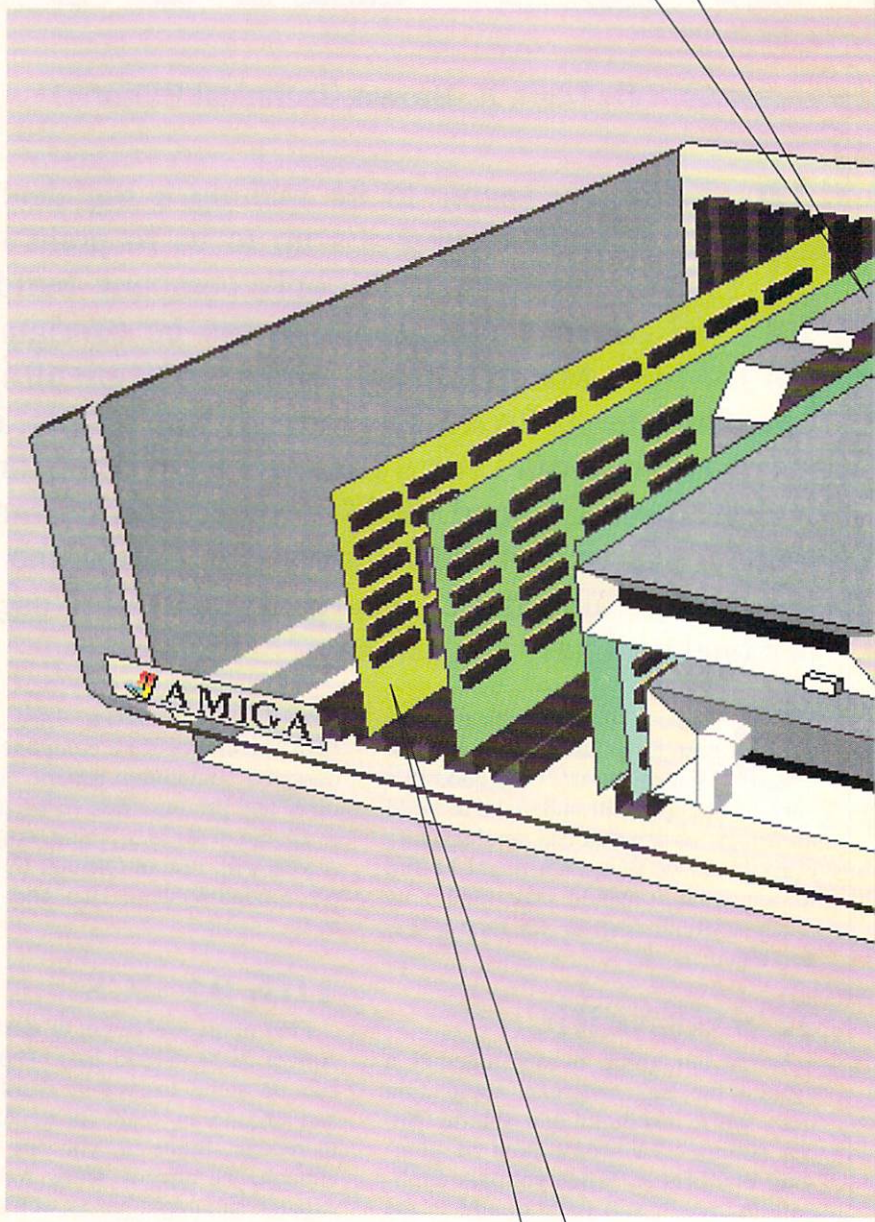
MEMORY

With an '020 or '030 board, we'll get more speed and efficiency out of our RAM if it's configured for 32-bit wide access. We'd just as well stock up while we're at it, so we'll get a full 8 megs. An 8 meg daughterboard for our accelerator card will cost us close to $3800, but the odds are good that it doesn't even take up an Amiga slot -- it mounts on the '030 board. Total system RAM: 9 megabytes.

MS/DOS

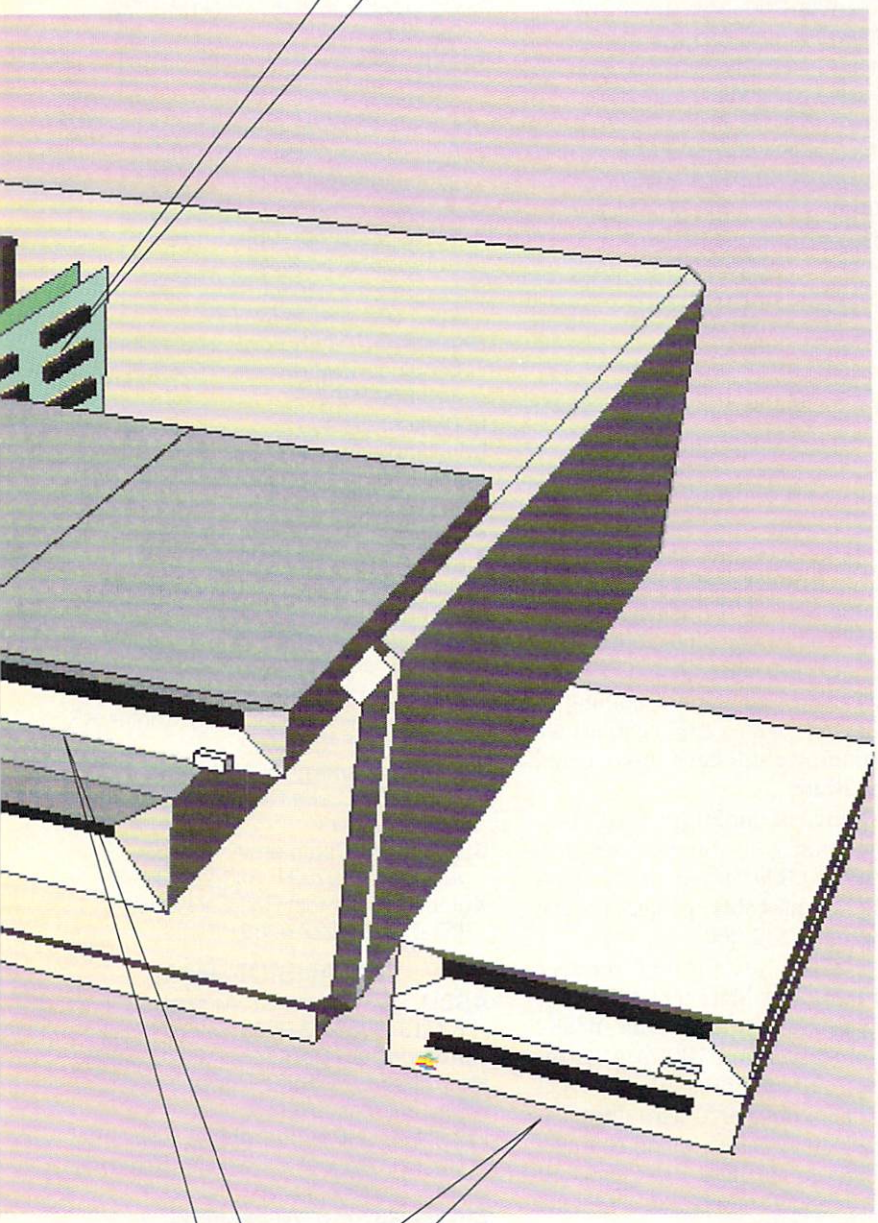
In order to run MS/DOS software, we'll need one of Commodore's Bridgeboards. The A2088 is only $700, but it emulates a plain vanilla IBM/PC-XT, which is not a very exciting machine. We'll go with the new A2286,

HARD DRIVE: Lots of fast storage is every Amiga owner's dream, and our Super Amiga is equipped with a SCSI-interfaced fast-access 100 megabyte Quantum hard drive. We've picked a hardcard design that sits completely in an Amiga expansion slot, leaving the drive slots free for floppies.



BRIDGE: Commodore's A2286 Bridgeboard gives our Super Amiga system IBM/PC-AT compatibility. Its on-board 80286 chip is not as fast as some less expensive IBM clones, but allows our system to share hard disk, display, mouse, modem, and other resources, and facilitates easy data transfer between systems.

ACCELERATOR: A Super Amiga system deserves the best cpu money can buy. Currently that means a 25 MHz 68030 equipped with an auxiliary 68882 math co-processor. In INFO's dream machine, a piggybacked 8 megabyte daughterboard filled with 32-bit-wide RAM provides us with superfast maxed-out memory.



DRIVES: Our Super Amiga is equipped with a full complement of floppy drives. Inside the case are two 3.5" Amiga drives, and the 5.25" slot is filled by the Bridgeboard's 1.2 meg IBM format floppy drive. Externally, there is an additional Amiga drive plus a 3.5" Macintosh drive.

which for $1595 imitates a generic IBM/AT clone, unfortunately without switchable clock speeds or any of the other niceties we'd get from a good AT clone. If we were really concerned about MS/DOS performance, we could just get the less expensive A2088 as the interface to the IBM buss, then invest in a PC-side 80386 accelerator card for about $1800. We could even wait for Commodore's own 80386-based Bridgeboard, rumored to be under development in West Germany, but we'll play it safe (and save some money) and stick with Commodore's A2286 AT clone card for now.

We get a 1.2 meg 5.25" IBM-format floppy disk drive with the A2286, so we'll mount that in the the 5.25" slot on our A2000. The Janus operating system software lets us share the Amiga's hard drive with IBM applications, so we won't need a separate hard drive. We won't add any IBM-side expansion RAM yet. We'll worry about that when we decide what applications we want to run.

MACINTOSH

To get Macintosh compatibility for our Amiga, we'll buy the $199 *A-Max* Macintosh emulator from ReadySoft (see review in this issue). We'll also have to supply the proprietary 128K Apple Macintosh ROMs and system software it requires, which can be difficult to find and will cost an additional $130-$200. And we'll add a $250-$300 external Mac drive. Though the A-Max can use the Amiga's internal drives to read and write a sort of "half-breed" custom disk format, we need the Mac drive to read native Macintosh program disks. Total cost is still under $700, and we've got ourselves a Mac.

A-Max does a good job of running most Mac software, even outperforming the Mac itself in some cases. With our 68030, it should really scream. The current model doesn't support hard drives or Mac sound, but ReadySoft and drive vendors are writing compatible controller drivers, so we have high hopes for hard drive compatibility in the near future.

VIDEO OUTPUT

We'll assume we've got a new Super Agnus chip in our A2000 (new units are currently shipping with them installed), and just for fantasy's sake we'll assume a new Super Denise chip and version 1.4 of the Amiga's operating system, too. (Developers already have them.) That way, we'll get the new flicker-free 640x400 "productivity mode," though we'll need a multisync monitor to take advantage of it. A generic one will cost us about $595.

SUPER AMIGA JR.

If you are concerned about price and are willing to forget about Unix compatibility (which is the most expensive part of our Super Amiga system), you can get MS/DOS and Mac compatibility squeezed into an A2000 system ($1999) by buying an A2088 XT-compatible Bridgeboard ($700) and an A-Max unit with ROMs and Mac drive (also $700). You really need at least an extra two megs of RAM ($700) to operate this setup properly, and you'll probably also want an inexpensive 40 meg hard drive just to make life easier, which will add another $700 or so to your price. A regular RGBA Amiga monitor (not multisync) runs about $350. Without adding much to the overall price, an inexpensive 68020 accelerator card will give your system an extra performance "kick" for $400-$700. That's a total of less than $6000 (list) for three computers in one box, which isn't bad.

We won't worry about super hi-res 1008x800 monitors and such, because we really don't need them unless we want to run something like *XWindows*. Since we're only concerned with making our Super Amiga compatible with the MS/DOS, Mac, and Unix operating systems for now, and we're not talking specific applications yet, we'll pass on such things and let ourselves worry about them when we decide what applications we want to run.

MISCELLANY

Obviously, we could add lots of stuff to our Super System at this point -- a modem, PostScript laser printer, network card, and so on. (I'm particularly tempted to include an optical *Boing! Mouse*.) But we really don't need anything else to achieve our goal. We've got our basic Super Amiga already.

WHAT WE'VE BUILT

It's time to take a look at the Super Amiga system we've assembled. We've got an A2000 box, and externally we can see that both Amiga drive slots are filled, and the MS/DOS 5.25" floppy drive fills the other external slot. Our 3.5" Mac drive is stacked beside the Amiga along with a third Amiga drive. The A-Max cartridge with the Mac ROMs in it sticks out six inches behind the external Amiga drive. (We could have plugged it right into the drive port on the Amiga, but that would have eaten up too much desk space.)

Popping open the Amiga case, we see there's still a lot of empty space inside. The 68030 board with its 8 megabyte daughter board occupies the CPU slot. The A2286 Bridgeboard fills a bridge slot, but the rest of the IBM slots are still empty. The Amiga slots contain just one card: our 100 meg Quantum hardcard. The video slot still has nothing in it. No matter what applications we choose to run, we still have room to add lots of hardware.

The list price of our Super Amiga system (with multisync monitor) totals a little over $13,000. If we were good shoppers, we probably picked up the works for under $12,000.

What did we get for our money? Well, we have a 25 MHz 68030-based 9 megabyte Amiga system with 68882 math co-processor and 100 meg Quantum drive, an 80286-based MS/DOS PC/AT clone with shared hard drive capability, a 68030-based Macintosh system (with eventual hard drive capability), and a 68030-based Unix system. That's four operating systems, and four extremely high-end machines at our disposal, all for a base price that averages about $3000 apiece. Not bad. And we never have to worry about not having the hardware to run any application that comes our way, because our Super Amiga system will run everything.

It's a good feeling, isn't it?

VENDOR LIST

ACCELERATORS

Commodore, 1200 Wilson Dr., West Chester PA 19380, 215-431-9100
CMI, 19552 SW 90th Court, Tualatin, OR 97062, 503-691-2552
CSA, 7564 Trade St., San Diego, CA 92121, 619-566-3911
GVP, 225 Plank Ave., Paoli PA 19301, 215-889-9411
Ronin, PO Box 1093, Alameda, CA 94501, 415-769-9325

HARD DRIVE CONTROLLERS

C Ltd., 723 E. Skinner, Wichita, KS 67211, 316-267-6322
Cache Systems, 917-A Disc Drive, Scotts Valley, CA 95066, 408-438-7595
Commodore, address above
Comspec, 74 Wingold Ave., Toronto, ON M6B 1P5, 416-785-3553
Expansion Technologies, 46127 Landing Pkwy., Fremont 94538, 415-656-2890
GVP, address above
Interactive Video, 11612 Knott Ave., Suite 13, Garden Grove, CA 92641, 714-890-7040
M.A.S.T., 3881 Benatar Way, Chico, CA 95928, 916-342-6278
Microbotics, 801 Alpha Dr., Suite 335, Richardson, TX 75081, 214-437-5330
Pacific Peripherals, 46728 Fremont Blvd., Fremont, CA 94538, 415-651-1905
Phoenix, 314 Court St., Clay Center, KS 67432. 913-632-2159
Spirit Technology, 220 West 2950 South, Salt Lake City, UT 84115, 801-485-4233
Supra, 1133 Commercial Way SE, Albany, OR 97321, 503-967-9075
Xetec, 2804 Arnold Rd., Salina, KS 67401, 913-827-0685

EXPANSION RAM

ASDG, 925 Stewart St., Madison, WI 53713, 608-273-6585
Commodore, **Comspec**, **CSA**, **GVP**, **MicroBotics**, **Pacific Peripherals**, see addresses above
Progressive Peripherals, 464 Kalamath St., Denver, CO 80204, 303-825-4144
Ronin, address above
Skyles, 231-E S. Whisman Rd., Mountain View, CA 94041, 415-965-1735

BRIDGEBOARDS

Commodore, address above

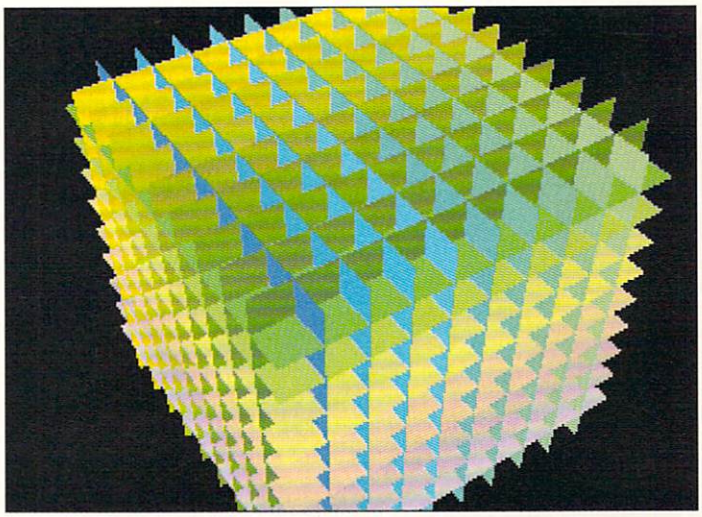
MAC EMULATOR

ReadySoft, #30 Wertheim Ct. Unit 2, Richmond Hill ONT L4B 1B9, 416-731-4175

Show Reports

WORLD OF COMMODORE Los Angeles

by Sue Albert



Colorful boxes created with Mindware's PAGErender 3D.

I love trade shows. Despite hip-deep hype, nuclear-waste nachos, deafening noise, and dishwater coffee, shows present a theatrical compression of soap opera, family reunion, and corporate-flavored flea market. The crowds were thin and some major players absent at WOC in Los Angeles this May, but there were plenty of old acquaintances to schmooze, swell new folks to meet, and some dandy gadgets and gewgaws to report on.

In the Gold Disk [416-828-0913] booth the new Hard Wired games *Denaris* and *Jinx* drew eager players competing for an A500. For productivity, the *Structured Clip Art* and *Professional Page Template and Design Guide* disks look like terrific time crunchers for desktop publishers.

Mindware International [705-737-5998] demonstrated to the press their new extremely fast *PAGErender 3D* which supports the X-Specs glasses or anaglyphic red/blue glasses (included) and has 3D PostScript output. It's shipping now for $159. The search for the third dimension continued with *Mondo Stereo*, a "stereo image construction kit" that will allow you to paint stereoscopic depth into any Amiga image while wearing your 3D glasses. A-Squared [415-339-0339] will distribute the program (under $100) and a companion book sometime this summer.

New kids on the block: Access Technologies [512-343-9564] was showing their exciting utility *Digi Works 3D*. It lets you capture font sets and logos with *DigiView*, autotrace the outlines, and convert them into 2D or 3D objects. In the same booth Rapide [205-533-7743] announced *Tracer*, a utility for tracing 2D grey scale *DigiView* images for transfer as one bitplane IFF files into paint programs.

Michtron [313-334-5700] was promoting *VIVA*, the soon to be released hypermedia CD disk compatible interactive authoring system.

Microillusions [818-360-3715] built a womb of their own where an impenetrable crowd listened to the effects of the *Music-X* demo. They are planning the release of *Dondra* and the Hanna Barbera *Flintstones* and *Jetsons...* real soon now. Progressive Peripherals [303-825-4144] was also playing the waiting game with their *Baud Bandit* 2400 modem ($149.95), *UltraDesign* ($399) CAD program, *Introcad-Plus* ($149.95 or $70 upgrade) and their low cost *RS 170A* broadcast quality genlock ($219.95).

PAR [206-694-1539] will ship a full featured icon creator, *Icon Magic*, in a few weeks. Free Spirit Software [215-683-5609] (now distributing *Basic 8* programs for the C128, by the way) was showing off their new *Ami Alignment System* for keeping those floppy drives in tip-top condition.

I spotted the friendly grin of Jim Oldfield at the Abacus [616-698-0330] booth. Abacus was offering its familiar line of books and its neat *AmigaDOS Toolbox* that includes some unusual fonts and a free *AmigaDos Quick Reference Manual.*

Hardware ran rampant. Checkpoint Technologies [703-247-0297] introduced their dual-port serial card for the Amiga 2000. Spirit Technologies' [801-485-4233] ST506 hard drive adaptor for using IBM type hard drives with the A2000 ships soon for $259. GVP [215-889-9411] created a total hard drive environment in their large corner booth featuring their new 44 Meg hard drive with removable hard disk Winchester Cartridges. Vidtech [305-477-2228] was on hand with the *Scanlock* NTSC/S-VHS genlock ($995). Digital Creations [916-344-4825] set hearts racing with the rock solid/crystal clear output from the *SuperGen 2000S* ($1595) promised in 90 days.

The business world was not neglected. OXXI [213-427-1227] was focusing on *Tax Break* and *A-Talk III* and happy to offer the "back and even better" *Nimbus 1.3* accounting program. B.E.S.T. [503-684-6655] was bragging *Plan/It*, the polished,

. . . continued

Minitel, France's national telecommunications service, makes its U.S. debut.

debugged, new/improved spreadsheet formerly known as *Maxiplan*.

The BIG Commodore Business Machines [215-431-9100] booth dominated the back of the hall with the largest group of suits and ties and stacks of beautiful, slick new product brochures. Spokesperson Gail Wellington announced nothing revolutionary, but did promise an Amiga *Logo* (soon) and re-emphasized the re-entry of CBM into the education market. Commodore was demonstrating the prototype of its home-grown, nameless, hypermedia CD disk compatible interactive authoring system (no release date).

Like getting flowers on Monday was the surprise at finding fresh and clever products for the deathless Commodore 64 & 128. Mike Smeltzer of Video Byte [312-851-6667] has developed a fast, friendly, and full color digitizer (79.95) for the C64/128 which can capture from VCR, b/w-color video camera, or live video. Mike stage-whispered of his gadget "under development" that will allow a C64/128 to simulate a FAX for under $70...later this year for this one, fans.

Software Support International [206-695-9648] introduced the *Maverick V.3* (formerly *Renegade*) which will install *Geos 2.0* on a 1581 disk...I'm impressed! Soft Disk [318-221-8718] was selling its third issue of the quarterly *Loadstar 128* disk magazine containing a great collection of font utilities.

Have loved ones in Australia, Europe, Africa, or even New York? The new graphics-rich, color *Minitel* [914-694-6266] electronic communications service is now available to C64/128 users for no sign-up fee, no monthly minimum fee, no prime time rate increases, and free software. With a modem and a credit card you can check out 80 countries starting at $.17 a minute!

Plasma to the C64/128... games. Virgin/Mastertronic [714-631-1001] will soon ship *War In Middle Earth*, a pure wargame version of the program. The 64 and Amiga versions of *Magic Johnson's Basketball* will appear by midsummer. Microillusions plans to release *Faery Tale Adventure* and *Dr. Plummet's House of Flux* at CES this fall.

So it's a wrap, friends. Lots of speculation on the low attendance. Was it poor publicity? Are Angelenos avoiding the freeways? Could our esteemed editor be right about too many shows, too close together? Don't have time to speculate...must begin training for the Amiga Festival...in three weeks! Ciao!

CES Chicago

by Tom Malcom

THE BRITISH ARE COMING! THE BRITISH ARE COMING!

Much as I hate to admit it, I vividly remember the British Invasion of 1963. The Beatles, the Rolling Stones, Herman's Hermits, and the rest of the British bands turned the music industry upside down. Anything with an English accent was suddenly all the rage and rock and roll was changed forever. Now there's a new British invasion and this one is standing the game business on its ear. The ingenious inventions of the Brits are lightyears beyond most American games and they're going to change the course computer games will take.

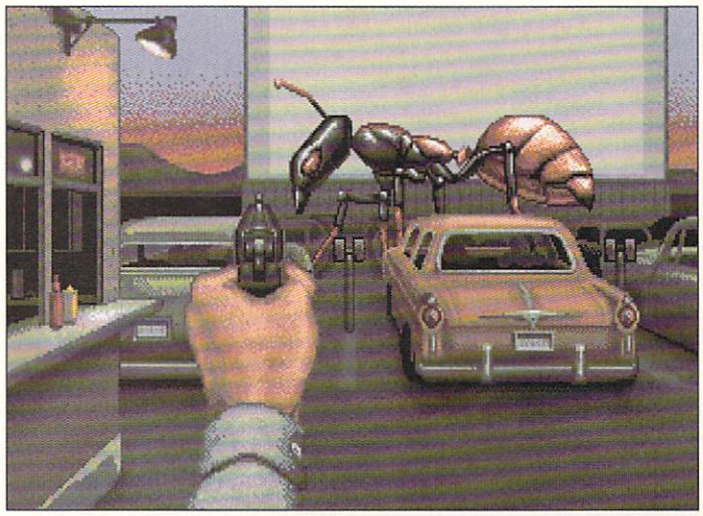
Though the attendance at summer CES was lower than in previous years, there were still thousands upon thousands of people there, even in the rain and cold that opened the show on Saturday. First thing, I went to see the people from Britannica Software [415-546-1887] at the Palmer House who were proudly showing off their new imports from British developer Logotron. Britannica is trying to dispel its image as a publisher of only educational software and importing the Logotron games will certainly go a long way in achieving that goal. Logotron's Herbert Wright showed me *Archipelagos* and *Eye of Horus*. *Archipelagos* is a rather strange game where the player builds land bridges between islands in order to connect and destroy a collection of obelisks. The solid modeled graphics have a nicely alien feel. *Eye of Horus* is an arcade adventure with beautifully drawn graphics in the style of ancient Egypt.

Mediagenic/Activision [415-329-0800] had a suite at the posh Ritz Carlton where they and some of their affiliated labels were showing new games. Dacey Young of Interplay [714-545-9001] showed me their new FRPG, *Dragon Wars*, which will accept *Bard's Tale* characters. She also told me that *Neuromancer* Amiga will start shipping in July. Microillusions'[818-360-3715] David Boyles had demos running of the Hanna-Barbera games they've been working on. What I saw were very true to the cartoons, particularly *The Flintstones* and *The Jetsons*. The characters are the same size as we're used to seeing on the screen and Microillusions has made sure the flavor of the originals is intact. Look for them to be released sporadically through the summer.

I had breakfast on Sunday morning with Paul Deckard from Microdeal [313-334-8729]. They will be releasing *Slots & Cards*, a collection of Vegas-type games including slot machines, video poker, blackjack, and keno. Microdeal is also working on a boxing simulation called *Ringside*.

A high point of the trip came later on Sunday morning when I was able to meet with Peter Molyneux, the British developer of *Populous*, at Electronic Arts' [415-571-7171] suite at the luxurious Mayfair Regent. He has boundless enthusiasm for the game and showed me several things in it I hadn't seen yet, like the Swamp Monster. Then designer Mike Posehn demoed *Deluxe Video III* for me, which looks good enough to become a top video presentation package. It is all object oriented, making it both easy to use and very powerful.

Being a longtime fan of 50's science fiction movies, I was delighted to see Cinemaware's [805-495-6515] latest back at the Ritz (which, by the way, makes the best potato salad I've ever eaten). *It Came from the Desert* combines all the classic cliches of such B movies as *Them* and *Attack of the Fifty Foot Woman* with an exceptional soundtrack. *TV Sports Basketball* is nearing completion and features full five-on-five play. I was also shown several of the new arcade games Cinemaware is releasing under their new Spotlight Software label. They are among the better I've seen lately, with *Speedball* and *Total Eclipse* of special note.



Cinemaware's tribute to 50's SF films - It Came From the Desert.

Sunday afternoon brought a trip to the Shedd Aquarium and a reception hosted by Psygnosis [312-620-4444]. The first section of *Beast*, their latest killer arcade game, features parallax scrolling twelve layers deep. The effect is incredible. Jonathan Ellis and his gang of British programmers are justifiably proud of this one. They were also showing the still unfinished *Aquaventure* for the second year in a row, along with the C64 version of *Baal* which is astonishingly close to the Amiga version.

Sunday evening I went to a screening of *Indiana Jones and the Last Crusade* hosted by Lucasfilm [415-662-1800]. They held a reception afterward at an elegant new hotel just off Rush Street. There were two glass cases holding props from the film, including the grail and Indy's hat and whip. The game based on the movie, unfortunately, was only being shown on a PC but will be released for Amiga and C64. *Loom*, a new graphic adventure with a musical interface (!) will be out on Amiga.

Monday was devoted to seeing all the people and stuff I had missed on the show floor. Noreen Lovoi and Tony Garcia of Epyx [415-366-0606] showed me all their new toys. *California Games II* looks much better than some of Epyx' previous sports collections. It features only four events, but they have been done with a little more depth. In a radical departure from their usual fare, Epyx is also coming out with *Ishido*, a beautifully done board game vaguely reminiscent of *Shanghai*. I saw it on a Mac II, but it will be released late this year in an Amiga version. The biggest news from Epyx, though, is that just days before the show they sold their long-awaited new hand-held color LCD game machine to Atari. It came as quite a shock, and what Uncle Jack and the boys will do with it is anybody's guess.

I look forward to going back to Chicago in July for AmiEXPO. In the meantime, I'll keep playing the terrific new British games and hope our American designers and programmers can catch up.

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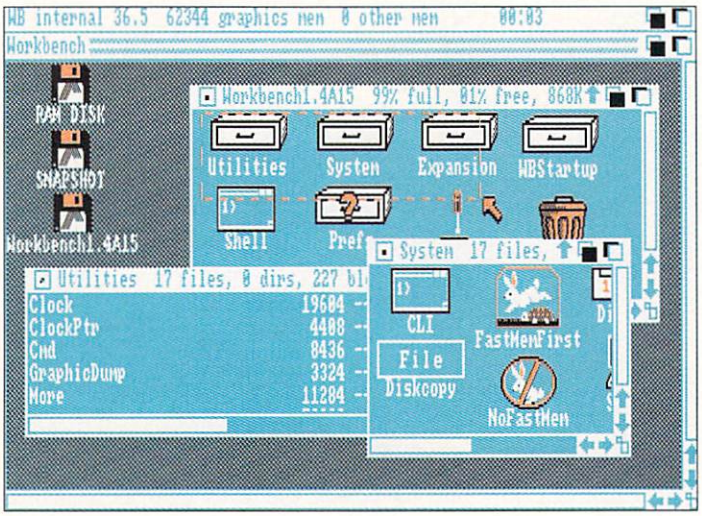

"Early alpha" version of WB1.4 displays many cosmetic and functional changes from previous versions.

AMIGA DEVCON

by Mark R. Brown

The fourth annual Amiga Developer's Conference drew over 300 registered Amiga developers to San Francisco in mid-June. Though the initial mood was clouded by recent uninspiring sales figures for all, once the DevCon got rolling, optimism for the future reigned.

After a day of registration -- which involved the handing out of four-inch-thick binders containing DevCon notes -- and a couple of introductory sessions for Amiga neophytes, the DevCon opened officially with keynote speeches by Dr. Henri Rubin and Commodore's new U.S. President, Harry Copperman. In his talk, Dr. Rubin called for simpler user interfaces and a friendlier user environment for the Amiga, and hinted at new features and design changes in the Amiga's operating system that would accommodate those goals. An "early alpha" copy of version 1.4 of the Amiga's operating system had been included with the notebooks at registration, and Rubin mentioned a couple of the improvements that had been added: AREXX support, and scalable fonts. At the mention of each, the crowd applauded enthusiastically. A quick glance at the schedule as Dr. Rubin finished revealed that most of the DevCon sessions were devoted to discussing the changes in v1.4. Rubin also drew gasps of disbelief from the crowd by announcing that Commodore was interested in backing selected developers financially if they were developing products that were important to the Amiga.

Copperman was up next. He impressed us as having a good grasp of where Commodore is coming from, and what their real problems are. "I've been met with a lot of skepticism," he told INFO shortly before his keynote speech, indicating that the "revolving door" on the President's office at Commodore has left many people with the impression that little would or could ever change at Commodore. He added that he felt that most of Commodore's problems were related to a lack of direction and resources. "I've got to hire a lot of people," he said, indicating that one would be a new VP whose role would be customer support. "I feel that we have to pick just five things and do them well," he added. In his speech, Copperman told the developers that his five areas of concentration would be: (1) to improve Commodore's image by advertising (with a probable $10-$12 million budget, starting this Christmas season) and "doing business more professionally," which includes hiring a full-time person to handle press relations; (2) to concentrate on the Amiga; (3) to improve distribution by carefully pruning and rebuilding the dealer network and building a new VAR program for video, music, and other specialized applications; (4) to develop new markets, like education and government; and (5) to improve customer satisfaction, mostly by improving customer support services.

After Copperman stepped down, Gail Wellington briefly took the mike to discuss the new products Commodore has under development. The *A2630* 68030 processor card is finished, and sports a 25 MHz 68030 and 2 megs of 32-bit RAM, expandable to 4 megs on the board. It runs about three times faster than Commodore's 68020 card -- available "soon." Commodore also continues with evolutionary changes in its hard drive controller design. The *A2090B* is a half-width board that eats up a slot in the A2000, adding auto-boot capability to the original *A2090* controller, should that be a major concern to you. The *A2091* is Commodore's new HD controller card. It's a DMA controller with a new custom chip and sockets for 2 megs of RAM. It can also accommodate a half-height drive onboard, leaving the A2000's 5.25" drive slot open for other uses. Wellington indicated the UNIX-based *A2500UX* -- with 68030, 2091 HD controller, 100 meg hard drive, and streaming tape backup unit -- would be available to developers real soon now. Fall availability was announced for the *A2232* multiple (7) port serial card, which is, by the way, controlled by a 6502 CPU. The

A2024 hi-res monochrome monitor is shipping in Europe, we were told, but vendor problems interfered with its introduction in the U.S. The *A560* and *A2060* Arcnet cards, plus Novell network client software, are also "almost done", as are the *A2350* Professional Video Adapter genlock/framebuffer and the *A2360* hi-res color graphics card. The *Amiga 3000* was also briefly mentioned, and was even shown to some developers (not the press) behind closed doors. Specs we were able to pry from privileged parties indicate the prototype has a 25MHz 68030 on the motherboard, plus 3 megs of 32-bit RAM and a built-in SCSI controller. No specific dates were given for the release of any of the products mentioned, though the year "1990" was batted around in conjunction with the A3000.

The majority of the three days of DevCon sessions centered around changes in version 1.4 of the Amiga's operating system. The copies given to conference attendees were an "early alpha" version which Commodore spokespeople said were "guaranteed to crash." They also said that the system was "not set in stone" and they wanted feedback on improvements that could be made before the system was finalized. But from the first session to the last, developers seemed pleased with the v1.4 Commodore had given out -- almost every single complaint or suggestion from last year's DevCon has been fixed or added to the new version.

The sessions covering v1.4 were packed with attendees slavering over all the new features. First and foremost is new AREXX support, hailed as the means of true interactive process communication, and therefore true multitasking, on the Amiga. A new ASL.library being developed by Charlie Heath and modelled on the ARP.library will provide programmers with standard font and file requesters, and maybe even a standardized color requester. Commodities exchange will add versatility

Harry Copperman, Commodore's U.S. President

to user input, as well as allowing cut & paste in CLI windows, and much faster character-oriented text scrolling. A C64-style full-screen command editor is even a possibility. C: directory commands have all been rewritten in C to be tighter, faster, and more standardized. Fonts have been made scalable; you will no longer be restricted to just the font sizes supplied on the system disk. The system has also been tweaked for optimum performance; RAM and ROM are now tested on power-up, and the operating system customizes itself if a 68030 or 68882 are detected. The Fast File System has been expanded to support floppy drives as well as hard drives. Guru error messages are gone, replaced by real system error messages. Preferences has been improved, with user control over more options. Demoing in the computer room was a new version of the Amiga's speech handlers, with an incredibly improved, more human-like sound and much more user control over inflection and intonation.

Version 1.4 of the WorkBench is completely different. Menu selections now have keyboard equivalents, and there are additional new menu items to create a new drawer without having to duplicate EMPTY, select all the icons in a drawer, quit and close the WorkBench, reformat a previously formatted disk, and reset the WorkBench. There is a whole new menu that allows the WorkBench to show all files in a window, whether they have an icon or not; it automatically creates an icon for all icon-less files. There is another option to show the files as text by date, name, and size, much as the files would be listed in a CLI window. The big difference is, they can still be clicked on like icons! Icons can also be "drag-selected"; that is, you can drag a window around multiple icons instead of having to "shift-select" them. If you change your mind, a quick click to the right mouse button before you release the left cancels the operation. Icons will also come up faster with v1.4, which creates a single master icon file of all icon images in a drawer.

WorkBench even looks different. Window and screen fonts are user-selectable. Disk icons no longer appear on the screen background, but in a sizable window of their own. The window "fuel gauge" is gone, replaced by disk and drawer information displayed in the window's title bar. Scroll bar arrow gadgets have been thoughtfully grouped in the lower right corner for convenience, and there is a new "Parent" arrow gadget up by the front/back window gadgets that returns you automatically to a window's parent window, if any. Though designs are not finalized, the final window design could even incorporate shaded 3D gadgets. There is even a new editable background pattern for the WorkBench screen! As an enhancement to the normal startup-sequence, there is a new WBStartup drawer; any programs dragged into WBStartup will be run automatically when the system powers up. The software designers' stated philosophy behind the new enhancements to the WorkBench is "to give WorkBench users the ability to do everything that CLI users can do."

There is also support for new features allowed by the Enhanced Chip Set, the

. . . continued

new improved Super Agnus and Super Denise chips. (Those, by the way, are the Official Names: not Obese Agnus, or Really Fat Agnus, or any of the other names stuck on them by users.) Among the new features are: a full megabyte of chip RAM; much larger blit areas, up to 32K x 32K; super-hires displays of up to 1280 pixels in width; and a new four-color Productivity Mode display of 640x480 non-interlaced (flicker free!) with a multisync monitor. The new Denise, now in prototype stage, will allow four new genlock modes: Chromakey, which allows any combination of color registers to appear transparent to the genlock; BitplaneKey, which lets any bitplane key the transparent area; and BorderBlank and BorderNotTransparent, which create transparent or opaque frames surrounding the active area.

There are, of course, many other changes and improvements that are of concern mainly to programmers and developers. Many of the version 1.4 changes are in the system KickStart, so A500 and A2000 owners will need to install a new v1.4 KickStart ROM to upgrade when the new operating system becomes available, probably some time in early 1990.

There's barely space left to mention the excellent party hosted by *Amiga Plus* magazine and the Disc Company at San Francisco's Exploratorium, a playground of science toys and exhibits that boggles the senses. If you visit San Francisco, don't you dare miss it. *AmigaWorld* and AmiEXPO also threw a respectable bash at the Golden Gate Holiday Inn, the site of the DevCon itself, and Commodore hosted an opening "Margarita's Night" and a closing "Beach Party by the Pool" where the temperature hovered somewhere in the neighborhood of fifty degrees. So much for beach parties in 'Frisco!

The consensus among attendees was that if Commodore follows through on even half of their promises, this could be a very good year for the Amiga. ☆

Photo scanned with Sunrise's $150 IMG Scan

AMIGA FESTIVAL

Held in San Francisco in conjunction with the Amiga Developer's Conference, the Amiga Festival was an excellent independent two-day user show. The art gallery of 200 poster-size Amiga graphics was worth the price of admission, and speakers, music and video displays, and a giant user group meeting rounded out the festivities.

The show itself was small, relaxed, and enjoyable, with many dealers hawking Amiga hardware and software and a fair showing of Bay area Amiga developers like Broderbund, A-Squared, and Maxis. Some, like Lattice and Brown-Wagh, had even come a considerable distance to be there. I had a good time exchanging info with Jay Miner, Rob Peck, and other Amiga notables. Unfortunately, I missed meeting Lion Kuntz, the Festival's organizer.

There were even some new products to see, like Sunrize's [409-846-1311] $150 *IMG Scan* scanner, which mounts on your dot matrix printer's printhead and scans in images at up to 360 dpi in 256 levels of gray. It's not as crazy as it sounds; the images look good, as you can see above. After all, it's the same method that's been used for years by *ThunderScan* on the Mac!

For PD aficionados who've been overwhelmed by the mass of information on the Fred Fish disks, you might want to order the $20 *CatFish* listings from ASCITEC [PO Box 201, Los Altos CA 94023]. This invaluable index lists all the Fish disk programs by title and subject in an inch-thick laser-printed 3-hole-punched manual. Updates are just $6. - Mark R. Brown

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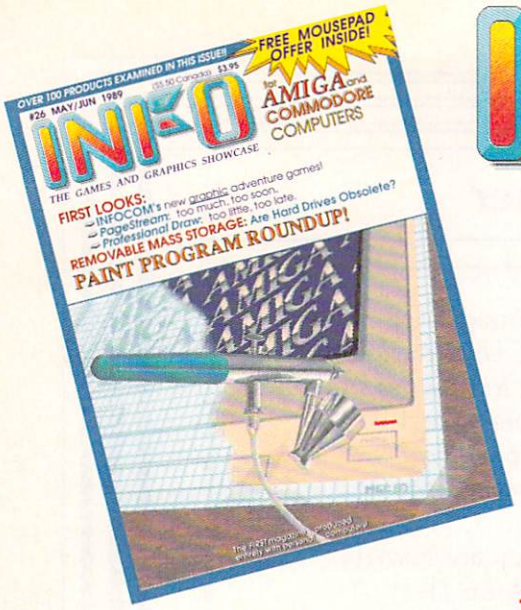

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#3 INFO 64, Spring 1984
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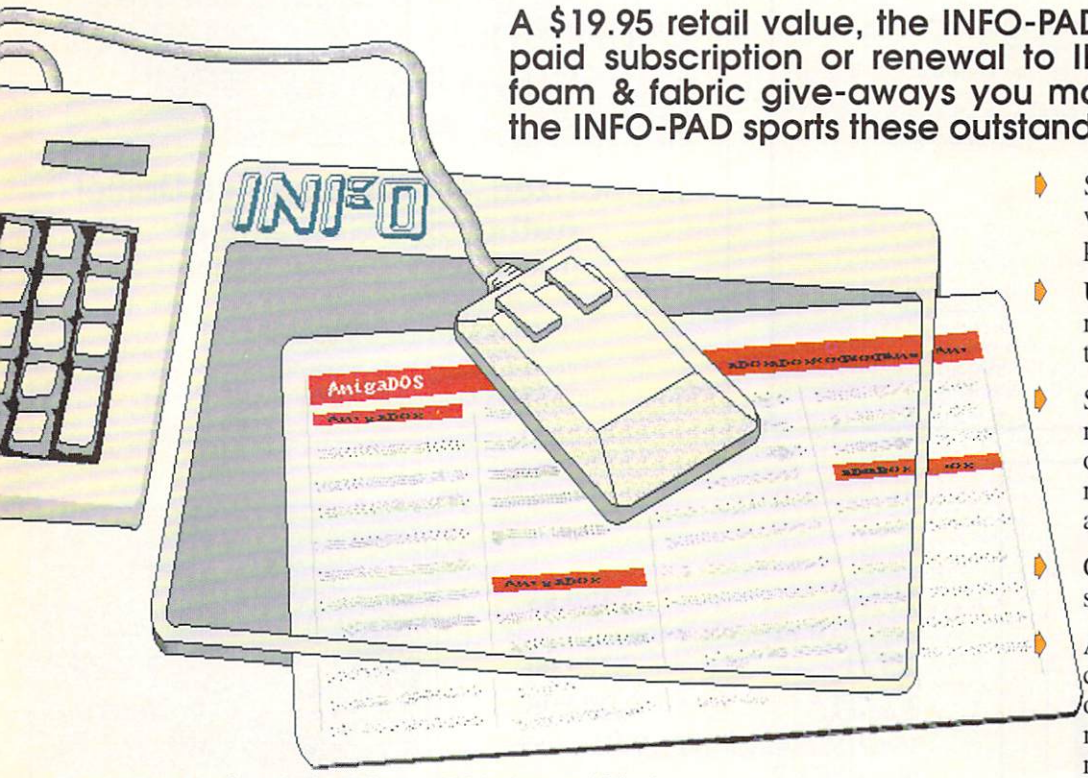

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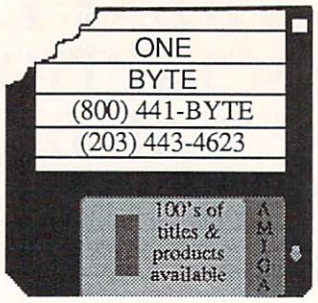

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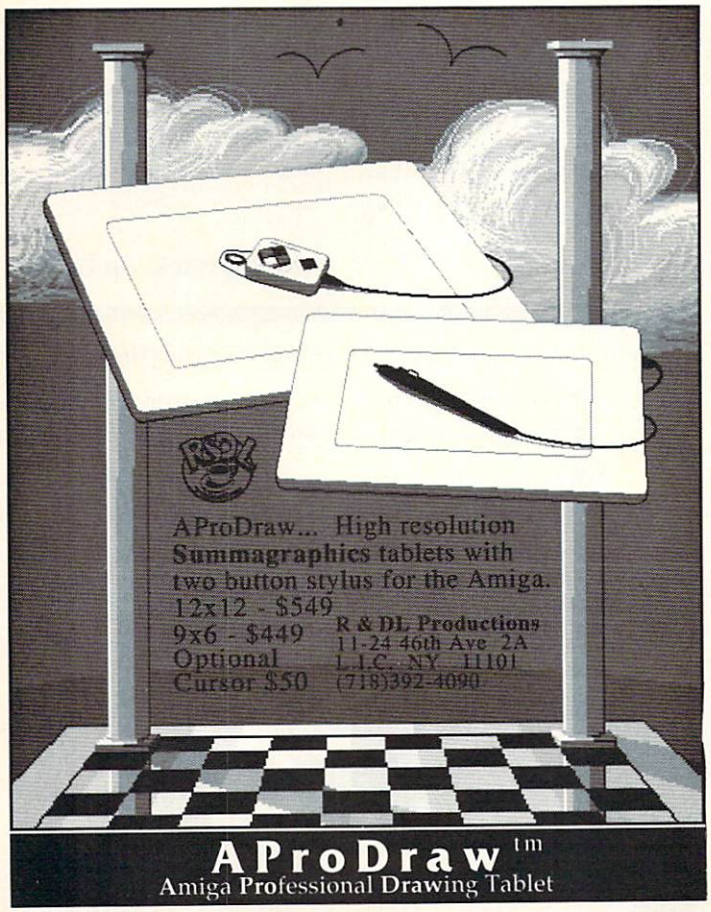

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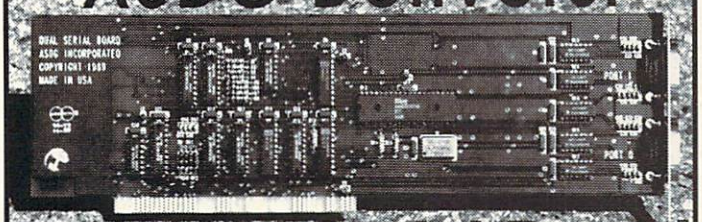

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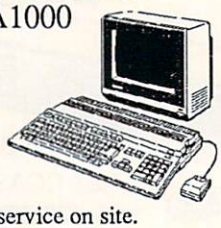

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THE RAMBOard

Beyond Super

RAMBOard does just what the other copy card on the market does: it adds RAM to your 1541 disk drive. This RAM is used to create a workspace where custom software can work its magic. Copy protection is evolving past the point of nibblers and other software-only solutions. Believe us, card based copiers are the future of archival technology.

So how do you decide between our card and "Brand X"? Don't compare the similarities - compare the differences. Their card is just "out there". You buy it, and that's pretty much it. RAMBOard was designed from the very beginning as an integral component in Maverick™, a complete system of archival tools and products. Their card puts the burden of the work on you. Are you good at soldering? You better be - their card REQUIRES it. On the other hand RAMBOards require NO soldering to install, the only exception being a handful of older 1541C's. That's not all - the other guys say they don't use parameters, but what they really mean is they don't WRITE parameters. The user is required to make special critical "copy adjustments" to copy software. Sounds like creating parameters to us. On the other hand, RAMBOard uses Maverick parameters, designed by experts to instantly and easily copy today's toughest titles. So when the other guys say that their card will copy "everything", that may be true - providing that you can figure out the proper "copy adjustment" settings for everything. Good luck!

The differences go beyond the product itself. Software Support International is the company that began with the award winning Kracker Jax series of archival parameters. Our customer support system has earned industry praise, and we've established a reputation for honesty and integrity. A close look at the track record of the other guys will show just how deep our differences run. So when you're ready to get involved with the future of archival technology, pick RAMBOard - a product you can trust, from a company you can trust.

The RAMBOard

1541/1541C Version: $34.95

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The RAMBOard is an optional Maverick accessory

THE 1581 TOOLKIT V2

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ALL NEW

If You've Been Waiting For A Sign, This Is It.

Introducing the 1581 Toolkit Version 2, the newest incarnation of the best program you can buy for your 1581 disk drive. How good is it? Well, V1 received 4 1/2 of a possible 5 stars from INFO™ magazine - and V2 is even better. What can it do for you? Picture using your 1581 with a:

- ★ **Fast Disk Copier**
- ★ **Fast File Copier**
- ★ **Byte Pattern Search**
- ★ **Partition Creator**
- ★ **Ultrafast Formatter**
- ★ **Track & Sector Editor**
- ★ **Directory Editor**
- ★ **Error Scanner**
- ★ **Relocatable Fast Loader**
- ★ **File Track & Sector Tracer**

And V2 adds many new or enhanced features, like the fact that both our single drive fast data copier and fast file copier now support the 1764/1750 RAM expansion units for super-fast one pass copies, or like our 64k video RAM support for 128 owners! And remember also that all of our 1581 Toolkit utilities use hyperfast read/write routines and, wherever appropriate, allow full access to partitions.

So whether you're thinking about buying a 1581 drive or you already own a 1581 drive, we guarantee you'll never really USE a 1581 drive until you've got your hands on the 1581 Toolkit.

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THE 1750 CLONE

Thanks For The Memory

Most Commodore users are content to use their computers within the constraints placed on them by a limited amount of RAM. But some people want more. More speed. More power. And that means just one thing - more memory.

Power users have long known that the ideal solution to their memory problems is out there in the form of Commodore's incredible 1750 RAM expansion module. Just plug it in and you've got a whopping 512k of onboard RAM - the same amount of memory found on most IBM computers! This is the memory cartridge that all serious Commodore power users want. There's only one problem.

You can't find them.

That's right. These RAM units are almost impossible to buy. We've always specialized in finding solutions to Commodore related problems - here's what we came up with.

First, we bought brand new Commodore 1764 RAM expansion units, the ones with only 256k of RAM onboard. Next, we had Chip Level Design engineer and produce a custom upgrade that takes a 1764 to a full 512k! That's the same half meg of RAM as a regular 1750! Finally, we tested each and every cartridge, and warranteed them to be free from defects.

Now there's nothing to stop you from taking your Commodore 64 or 128 to levels of power and sophistication that the original designers never even dreamed of! If you're using programs like GEOS from Berkeley; the Pocket Series from Digital Soutions; future versions of Maverick from Kracker Jax; Fleet System IV from Professional Software; or the potent PaperClip III from Batteries Included; if you're using ANY of these programs, you won't believe the difference that the extra memory makes!

IMPORTANT NOTES - READ CAREFULLY

*C-64/64c (but NOT C-128/128D) owners MUST buy a heavy-duty power supply to use these units. The power supply is NOT included - it is available from us seperately.

* If you ALREADY own a 1764 RAM cartridge, we can upgrade it for you. Your unit MUST be in perfect working order for us to upgrade it. The turnaround time on upgrades is approx. 2 weeks. It will NOT be necessary for you to purchase a new power supply - the one that came with your 1764 will still work fine.

THE 1750 CLONE

ONLY $199.95

1764 UPGRADE

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ATTENTION C-128 OWNERS

Solderless 64K Video RAM Upgrade

Now that Commodore has released the C-128D with 64K of video RAM, we should be seeing 128 programs address this fantastic new feature soon.

BASIC 8 already has the capability of using all 64K of video RAM. If you own the C-128 in stock condition, you own all 16K of video RAM that Commodore felt was necessary. Using Basic 8 format and the full 64K of video RAM provides you with the ability to scroll through video memory as well as enhanced color resolution.

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Includes easy to follow installation instructions, a test program to verify proper installation, and the plug in 64K Video RAM Upgrade.

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We've also cut the price on The Shotgun II, one of the most powerful nibblers ever produced. Originally $14.95, you can now own it for only **$9.95!**

And just because there's a remote chance that it might be your birthday, we'll go one step further: Buy the Kracker Jax Volume 1 -7 package for **$29.95,** and we'll throw in The Shotgun II nibbler **FREE!** Quite a deal, huh? But if you want it, better hurry - supplies are limited. After all, nothing good lasts forever.

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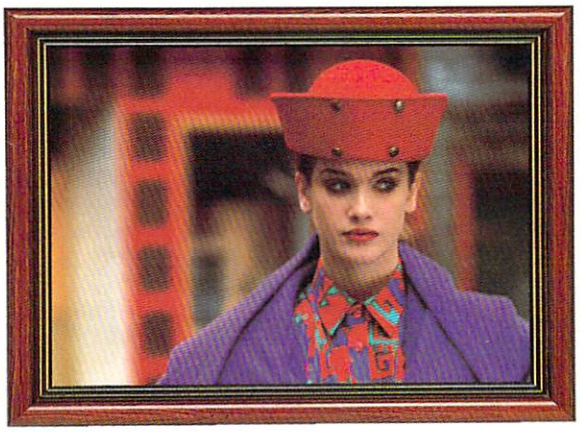

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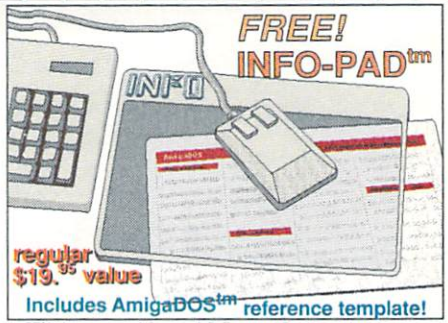

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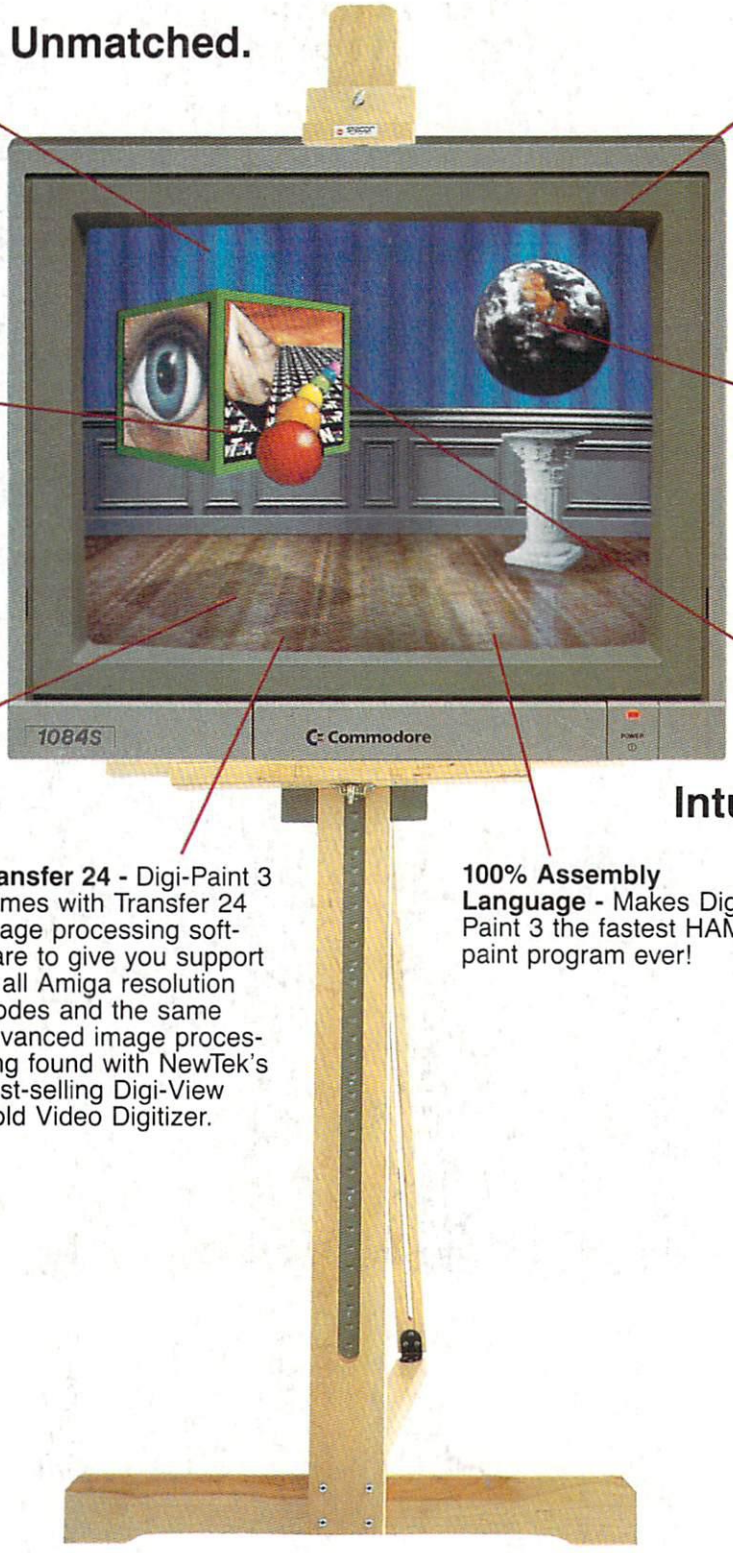

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